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THE PRINCIPLES OF PRAGMATISM

THE PRINCIPLES OF PRAGMATISM

A PHILOSOPHICAL INTERPRETATION OF EXPERIENCE

BY

H. HEATH BAWDEN

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TO
MY FORMER STUDENTS AND TO
ALL WHO LOVE TRUTH
AND FREEDOM

PREFACE

THE significant fact in recent philosophy is the conscious demand for reconstruction of its method, — a reconstruction of its whole purpose and procedure, not merely a patching-up of the existing machinery of reflective thought.

This demand implies the breaking down of the customary division of philosophy into theory of knowledge and theory of reality, and the treatment of these as phases of a general theory of experience. The course of discussion in the past few years between the leading schools of thought has made evident the need of a new statement of the issues involved. No one of the proposed systems has been generally accepted. The truth must lie somewhere in their uncriticised postulates. The present work is an attempt to set forth the necessary assumptions of a philosophy in which experience becomes self-conscious as method.

This demand for reconstruction implies also a synthesizing of the fundamental underlying ideas in a form which the man of average intelligence and education may understand. In these days, when the different branches of phi-

losophy have become professions, and their language as unintelligible to the layman as the technicalities of the special sciences, the need of simplification is obvious. Pragmatism is an attempt to meet this need. There have arisen, however, many apparently contradictory interpretations of this new movement, even in the minds of its professed exponents. It is the hope of the author that these pages will aid in clarifying the meaning of this word "pragmatism."

It is not the aim to construct a system, but to show how in pragmatism we may establish the basal conceptions of a new philosophy of experience.

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H. HEATH BAWDEN.

SAN YSIDRO, CALIFORNIA,
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THE PRINCIPLES OF PRAGMATISM

"Some people swallow the universe like a pill. . . . It is better to emit a scream in the shape of a theory than to be entirely insensible to the jars and incongruities of life and take everything as it comes in a forlorn stupidity."

ROBERT LOUIS STEVENSON.

THE PRINCIPLES OF PRAGMATISM

CHAPTER I

PHILOSOPHY

§ 1. PHILOSOPHY AND PRAGMATISM

PRAGMATISM is a recent movement of thought which is seeking to do justice to the neglected claims of common sense, of religious faith, and of science, in determining a true philosophy of life. As Professor James says, it is merely a new name for some old ways of thinking, yet in its scope and depth of significance it promises to rank among the important and characteristic products of our Anglo-Saxon civilization.

The New Philosophy called Pragmatism.

It is not uncommon to find, even among those who make the study of philosophy a specialty, the opinion that the plain man in some sense stands nearer to the truth of things than they themselves do. By the plain man is meant the man of action or man of affairs who, as a rule, does not make the principles of his action the

subject of special or prolonged reflection. This is not to say that the practical man, as we often call him, does not think or plan his conduct. It means that for him thinking is instrumental to some purpose and does not itself become the end or object of his thought. He thinks, but he does not reflect upon his thoughts. Thought more immediately goes over into what we call movement. His ends are those immediately suggested by the social situation. He does not turn back to critical analysis of the machinery of his individual mind by which these social ends are achieved. The emphasis is upon action rather than upon thought, upon practice rather than upon theory. The reflective thinker, whether he be called scientist or philosopher, feels at times that in transferring his immediate interest from the overt act to the inner technique which conditions the act, he has sacrificed somewhat of the concrete human values with which the practical man is in closer touch.

There has been a disposition in recent years to make philosophy more practical than it has been in the past. The spirit of democracy has at last reached the metaphysicians, than whom there has been no more esoteric class in society. By its very nature philosophy is universal and

democratic in its interests, and there have always been those who have realized this. But too often these have been outcasts from the society of the elect, and regarded as falling short of full philosophic insight. Without doubt, in seeking to be of service to men, they have frequently failed in logical consistency. But their purpose, not only to serve the truth, but to make the truth serve the needs of man, is the noblest aim possible to science, and even the philosophers are coming to see that utility is compatible with validity. The latest manifestation of this high aim is the new philosophy called pragmatism, which, while not free from one-sidedness and partisanship in some of its forms, is on the whole to be hailed as a movement of the greatest significance, and a sign that the democratic ideal is destined to transform our thinking as well as our conduct.

Pragmatism and Practice.

Of the pragmatism of naïve practice we need say nothing; it is justified by its works. It needs no vindication, or, rather, when it seeks to justify itself, it is no longer practice, nor is it any longer naïve. It has entered the realm of reflection, and becomes scientific or philosophic according to whether the reflection undertakes the critical analysis of some

specific phase or the technique of practice as a whole. Pragmatism, if consistent, one might suppose, would not aspire to become a philosophy. It should be content to be what the word denotes, conduct not theory, action not thought, life not doctrine.

A deeper insight, however, discloses the fact that the practical is what it is only by contrast with the theoretical, and that the current pragmatism is the reaction from a speculative philosophy out of touch with the affairs of men. This emphasis upon practice not only implies, but demands theory, — the true theory. At the outset the pragmatist must not only admit but insist that theory and practice imply each other in the most intimate way. A philosophy may give assurance of God, freedom, and immortality, but if it bakes no bread it is sure sooner or later to be called to account. What the practical man wishes is a theory of life, not of the after-life; a philosophy of this world, not of a hypothetical heaven. He follows with interest the development of a working hypothesis in science, but is impatient of speculations on the infinite and the eternal. He admits the value of the thinker in the world, but he insists on the thinking of concrete things; he has no use for empty

abstractions. He sees the place of ideas in the universe: he is an idealist. But he maintains that ideas are always instrumental to action: he is a practical idealist. The common sense of the plain man is pragmatic. It sometimes forgets that it is also idealistic.

But whatever the naïve pragmatist may do, the reflective and critical pragmatist does not forget that theory is itself practice undergoing transformation. Ideas are the metamorphosis of action. We think when we cannot act efficiently without thought, when our more immediate types of behavior break down. There can be no contradiction between theory and practice. Theory is simply practice in solution. When, therefore, recoiling from an over-emphasis of certain abstract phases, we find reflective thinkers coming back to life, the original starting-point of all theory, we are not witnessing the establishment of a new school of philosophy, but simply the reaffirmation of a temporarily ignored but universal aspect of all reflective thought. If there is danger in the extremes of intellectualism, of absolutism, and transcendentalism, there is danger also in an ultra-radical expiricism, relativism, or immediatism. If pragmatism is individualistic and solip-

Pragmatism and Theory.

sistic, as its critics assert, it is little improvement on the various forms of absolutism to which it is opposed. But when we become pragmatists in a true sense we do not lose what is worth while in intellectualism and absolutism. We carry our theory back to its sources to establish its continuity, and forward to its results to establish its validity. We do not cease to recognize the value of theory when we emphasize the importance of practice. We merely insist on the fundamental importance of action and the instrumental function of thinking, in an attempt to counteract the vicious fallacies of systems of philosophy which oppose or reverse this relation. Pragmatism does not deny that thought is as valuable as action. It affirms it. It holds that thought *is* action in process of transformation; it asserts that thinking is itself a form of practice.

The Founders of Pragmatism.

Pragmatism originated as a principle of logical method, first formulated by Mr. Charles Peirce in 1878, in a series of articles published in "The Popular Science Monthly." Twenty years later, Professor James, in an address before the Philosophical Club of the University of California, brought Peirce's principle to the attention of the philosophical world, since which time those sympa-

thetic with the general point of view have been rallying about it as an organizing centre.

At the present time it is connected with the names of three men, Professor William James of Harvard University, Mr. F. C. S. Schiller of Oxford University, England, and Professor John Dewey of Columbia University, each being associated with a distinct phase of the movement. Professor James emphasizes the practical meaning of philosophy for every-day life, and in describing his point of view uses the words "Pragmatism" and "Radical Empiricism." Mr. Schiller defends the rights of religious faith and feeling in determining our beliefs, and prefers the term "Humanism." His philosophy has much in common with what in other quarters has come to be called "Personalism." Professor Dewey is the champion of a scientific empirical method in philosophy. This method is quite generally known as "Instrumentalism," but in a recent article is described by Professor Dewey himself as "Immediate Empiricism."

These three leading exponents of pragmatism may be regarded as meeting the objections to philosophy urged, respectively, by the man of affairs, by the mystical religious man, and by the man of science.

The man of affairs has objected to philosophy in the past on the ground of its being abstruse and theoretical, impractical, and dreary. He is unable to convert the speculations of the metaphysician into market values, on the one hand, while, on the other hand, it unsettles his faith in the spiritual verities, belief in which he finds essential to his peace of mind. Philosophy is looked upon as a sphere of inquiry remote from the interests of everyday life, and occupied with barren speculation about questions which it never occurs to the ordinary man to raise. It is reproached for speaking of things that everybody knows, in language that nobody can understand. And there is no doubt that philosophers are often indebted to their own preconceptions for the existence of problems which give trouble to no one else, so that to an outsider their enterprise appears to be little more than a systematic attempt at self-bewilderment.

The Man of Affairs.

The answer which pragmatism makes to this objection of common sense is to admit its main contention. Concrete experience must, in the last analysis, be the test of the truth of ideas, and it must be admitted that philosophy in the past has often lost sight of the interests of

practical life. As Mr. Peirce and Professor James put it, there is no difference that does not *make* a difference. The test of theories must be found in practice. The pragmatic philosophy is a renewed emphasis of this truth. It is a philosophy of doing, and of knowing only in relation to doing. It is a philosophy of work, of activity, of enterprise, of achievement. And for this reason it has taken up arms against all forms of dogmatism and apriorism, in so far as these stand for intellectual interests which do not grow out of, nor minister to, the needs of life.

The pragmatic philosophy, however, has one trenchant criticism to make on the attitude of the man of affairs — he stands in his own light, stands so close to his practice that he loses perspective, holding a nominal theory which does not correspond with the real theory of his practice. His attitude is essentially uncritical and primitive — naïve, total, implicit, rather than reflective, discriminating, and definitive. In becoming practical, philosophy deals common sense a severe blow by showing its inconsistency and the narrowness and vulgarity, often, of its empiricism; for, after all, theories, while not action in an overt

The Limitations of Common Sense.

sense, are yet themselves just refined forms of adjustment in a complicated environment.

Philosophy is not necessarily abstruse, nor are its speculations barren. There are problems and mysteries enough, but so there are in every-day life; these are not peculiar to the realm of metaphysical thought. Philosophy is difficult only when it is not philosophic enough to be easy. Professor James has said that metaphysics is only an unusually obstinate attempt to think clearly and consistently. All thinking is difficult in a sense, to be sure. We do not have to think when things move smoothly. Only when we encounter obstruction do we resort to ideas. Thinking is the sign of the presence of some emergency which we are trying to meet. But this is not peculiar to philosophic reflection: it is true of all thought. Philosophical thinking does not differ from other thinking so much in being more difficult as in being more systematic. It is unsystematic work which is hard work. What we are doing is easier if we have a correct method of doing it. If philosophy seems difficult, vague, and obscure, if it does not seem to get anywhere, if it does not enlighten, if it does not give a truer and deeper as well as a larger

James's Practicalism.

point of view, there is trouble either with the philosophy or with one's self. If one is a learner he will give philosophy the benefit of the doubt and keep on thinking. In time there will emerge either a new conception of philosophy or a new conception of one's self — perhaps both. When one has worked his way through to a vantage-ground, he will see that nothing is more practically useful than a philosophical point of view. It is not a question of having or not having a philosophy, but of whether it is to be a good or a bad one. And the aim is, not to learn philosophy, but to learn to philosophize — to learn to interpret the results of the special phases of experience in terms of one another, and to see all phases of life in relation to the whole.

"Come to my office and we will talk it over," said the great financier to the young man of promise. To talk things over and to think things over — this is the only philosophy of life that is really worth while, and we are all philosophers in this sense when occasion demands. A group of men talking politics, or a circle of women discussing the social situation, is often the originating centre of a true spirit of philosophy. One of the greatest modern products of reflective thought, Locke's "Essay on the

Human Understanding," originated in this way. For in the last analysis philosophy is simply having a point of view in life, insisting on understanding things as far as possible, instead of going it blindly. And when one becomes interested in discovering the deeper foundations and in gaining the wider outlook by a study of those sciences which treat of man and his place in the cosmos, he is simply carrying further this practical interest of having a method in managing his experience. Philosophy is looking on life with a conscious and systematic attempt to understand it in its widest and deepest relations to the universe.

The Mystic.

Another type of person who is more impressed by the so-called spiritual things of life, by the values as opposed to the facts, believes that the realities which are of most worth are apprehended through the feelings and by faith rather than by purely logical processes, and objects to philosophy on the score of its being artificial and arbitrary, substituting formulas for vital experience and abstract propositions for warm concrete appreciations. This is essentially the mystical attitude, and includes, not only the religionist, but the artist and many others who distrust the purely intellectualist way of looking at the universe.

The mystic objects to philosophy on the ground that the ultimate truth of things is to be apprehended in a more immediate way than by reflection: it is intuited, felt, absorbed in some pre-rational or super-rational way, not reasoned out by the laborious methods of thought. This immediate sort of knowledge does not demand demonstration: it is only mediate knowledge that admits of proof. In religion, where this attitude is most frequently encountered, the most vital and fundamental truths are laid hold of, not by the intellect alone but by faith, by the emotional and volitional nature. The ultimate test lies in the "experience" of religion, by which is meant an active appropriation, as well as a passive acknowledgment of the truth. One is incapable of understanding what religion is until he has thus assimilated it to the subterranean currents of his being. The mystic feels that the attempt to encircle reality in a system of philosophy or a scientific law depletes it: the full reality is infinitely more than any possible thought or linguistic expression of it.

Here, again, pragmatism admits the main contention of the objector. Philosophy too often, as Mr. Bradley has said, is the finding of bad reasons for what we believe upon instinct,

and the substitution of abstract impersonal laws for the living personal values of immediate experience. And this new philosophy called pragmatism is trying so to reconstruct the intellectual machinery as to meet the needs of this deeper emotional and volitional nature of man. In so far as it emphasizes the personal as opposed to the purely formal conditions of thinking, it may be described as mystical in the good and legitimate sense of the word.

Schiller's Humanism.

This is the core of Mr. Schiller's Humanism. Faith underlies the hypothesis of scientific method as truly as it does the act of obedience in religion — not, however, in the sense of the child Mr. Schiller quotes, who said that faith is believing what you know is n't true, but in the sense rather of a legitimate speculation, where most of the factors are uncertain, a prudent gambling or betting on partial knowledge. If faith lies at the basis of our credit system in business and is the only sanction of the inductive leap in scientific generalization, why should it not be legitimate to take the risk of there being a God or a future life? For all we know, the wish and the will to believe may be a factor in determining the reality.

Thus pragmatism is a protest against the cold intellectualism of the philosophy and science of the age. In mastering the means of living we have forgotten the ends of life. We confuse money with wealth, the Church with religion, politics with government, the school with education, leisure with culture. He fails in the having who spendeth his days in the getting. The values of life, as Hume long since taught us, lie in the a-logical forces of the soul. Reason and the ratiocinative processes are justified only when they serve at once to satisfy and to modify the feelings and desires which underlie all other aspects of personality.

Much of what the mystic says is true. The attempt to think or describe anything is a selection of aspects which are important from the point of view of a certain interest. There is an abstraction from the full reality, much of which remains unexpressed. This experience is familiar to any one who tries to express his thought in language. It is never possible to say just what one means. "Language foreshortens experience. . . . It is a perpetual mythology." But this objection has weight against every attempt to *state* experience. In one sense reality *is* much more than

Experience is more than any Statement of Experience.

we are able to describe. It is not because we seek to give reality a new formulation that we fall into this error: this is the inevitable implication of using *any* definite symbols. Reality is always richer than systematized knowledge. Experience is not exhausted in verbal ideas of it. Philosophy always falls short of the fullness of life. But we should not be deterred from seeking to state a theory of experience in as rational a form as possible because there is vastly more than we can formally express. Indeed, this is just the reason for pushing forward to a completer world-view. The only alternative is that of sheer immediacy, not to pretend to state it, but just to be it, live it, feel it, by a process of direct and unutterable appreciation. Even this alternative is not actually open, since even the immediacy of mysticism requires a certain amount of ratiocination to give it content.

The longer we live and reflect upon the meaning of life, the more we feel that the deepest motives which underlie our conduct are too subtle to admit of exact statement. There are all sorts of wonderful things that happen to people which do not get written down in their science or their philosophy of life — experiences which words are too clumsy or too colorless to

describe. Yet these unrecorded moments are usually the most real, in the twofold sense of being at once the most sensibly actual and the most imaginatively ideal. The poet and the artist often succeed in conveying hints of these finer nuances of feeling, but they elude the gross methods and measurements of science and the abstract general formulas of philosophy. Certain phases of the routine of our behavior may be described with precision and their laws determined with a considerable degree of accuracy; but an adequate theory is still lacking of those moments of creative activity and rational insight and emotional appreciation in which we take the forward steps that are called progress. In terms of so imperfect a medium as the spoken or written word it is difficult even to suggest the more delicate tints of feeling and the finer shades of thought which are the real though invisible forces which determine our acts. Yet just this has been the aim of science and philosophy throughout history — to understand and state the laws by which we progressively evolve what we call experience or reality.

One need not apologize for the use of language in trying to express scientific and philosophic ideas. All words at bottom are equivo-

cations, and the most logical reasoning only succeeds in chalk-marking the ambiguous middle terms. In truth, the very significance of the middle term lies in its ambiguity at the start: the process of the investigation is just to clear up such ambiguity. Philosophy is itself merely a stage in the progressive definition of experience. As long as we are obliged to employ so imperfect a vehicle as human language, we cannot avoid a kind of circle in all formal reasoning. But it need not be a vicious circle. Even the scientist and philosopher must suggest poetically, as it were between the lines, what cannot be expressed didactically in verbally consistent terms. He must learn to rhapsodize more or less if he would not amputate his thought to fit the Procrustean limits of mere words. Language-forms are themselves but the inert precipitate of thoughts which have volatilized to higher spheres. There is a rational place for mysticism even in science. If we are to have a philosophy of life it must pay the price of being inadequate in this sense. But if at the beginning we clearly recognize this inevitable ambiguity, we have removed its harmfulness from our subsequent philosophizing.

A Rational Mysticism.

A third objection to philosophy is raised by

the man of science, and the reply to this is contained in the new instrumental or functional theory of knowledge set forth by Professor Dewey and his school. The man of science criticises philosophy for being too theoretical in the sense of speculative, "not sticking to the facts." The metaphysician, he says, is prone to spin a universe out of his own inner consciousness, and tries to make the facts fit his ideal system. Once again, pragmatism meets the objection by admitting its force so far as past systems of philosophy are concerned, and seeks to win the coöperation of the scientist in constructing a philosophy which will be accurate in its method.

The Man of Science.

The pragmatist, however, reminds the man of science that he is not free from speculation in his own enterprise, that hypothesis is one of the leading instruments of scientific research, that his whole procedure is shot through and through with metaphysical presuppositions which are the more prejudicial because unsuspected. The aim of the pragmatic philosophy is to apply to metaphysical speculation the test of scientific exactness, on the one hand, and, on the other, to help the scientist to bring to clear self-consciousness his own logi-

Antagonism of Philosophy and Science.

cal assumptions. This involves, not only a new conception of philosophy, but also a new conception of science in its relation to philosophy.

The enlightened philosophy of to-day, instead of being antagonistic to science, confesses dependence upon it. Both begin with concrete experience, with the meaning of life as we live it. During the greater part of our lives we act impulsively, feel directly, think attuitively. This is our practical consciousness, the consciousness of every-day life. But when we become scientists and philosophers, we begin to ask How? and Why? we inquire into the causes and reasons for things. We examine, criticise, and revise the notions of ordinary experience. We discover contradictions among the various ideas upon which common sense has relied, and seek to make them consistent. When the emphasis is on the investigation of specific details, this is called science; when it is on the general principles of explanation, it is called philosophy. But science and philosophy presuppose each other; they are integral parts of experience when it is reflective and critical. A science which is "anti-metaphysical" and a philosophy which is "transcendental" defeat their own end. Either without the other is a fragment. A science which disdains philoso-

phy is like a part which should deny its dependence upon the whole. A philosophy which despises science is like the whole which should deny that it is made up of parts. They differ only as the specific and the generic, as the particular facts and the universal meaning or law which explains the facts. Philosophy is just the theoretical part — the logic of experience, the methodology of science. We should speak, not of philosophy *and* science, but of the philosophy *of* science, just as we are learning to speak, not of theory and practice, but of the theory of practice. True philosophy, Professor Dewey says, is simply the intrinsic metaphysic of science, its *modus operandi* brought to consciousness. It is the "reconstruction of experience through the clear and ordered recognition of the method of experience."

The wings of metaphysical speculation are clipped. Philosophy, however, is not relegated to the left-overs. The subject-matter of philosophy, as ordinarily conceived, is the scientist's methodological scrap-heap. All the residual problems which he shoves aside as unimportant or irrelevant are turned over to philosophy, which, as the various sciences successively split off from the parent stem, has

Interdependence of Science and Philosophy.

thus to be satisfied with the vague chaos of general opinions which have not yet come under scientific scrutiny. On such a view philosophy can never hope to occupy a position of dignity in the intellectual world; for as soon as the human intellect takes up seriously one of these remaining problems and subjects it to careful experimental study, it ceases to be called philosophy and is scored to the credit of science. The result is that the field of philosophy becomes more and more restricted, until finally science occupies the whole field and philosophy has only an historical significance.

The name, to be sure, is unimportant, — whether it be called philosophy or science, — but the fact is that as science has gradually encroached upon the field of the so-called philosophical subject-matter, her method has been becoming more and more philosophic: that is to say, with the progress of science it becomes increasingly necessary to go beyond the confines of a particular science in order to explain any one of its facts. Hence the appearance of the hyphen-sciences and of the comparative method, which have grown up in the interstices of the sciences as formerly classified. Now, in so far as an explanatory law extends beyond the pro-

vince of the particular science, it is what, in the history of thought, has been called a philosophic principle, and inasmuch as science to-day is increasingly comparative in its method, it follows that it is becoming increasingly philosophic. Instead of philosophy being condemned to the unclassified residuum, it is becoming the very methodology of science. Each scientist is perforce becoming philosophic in order to understand the implications of his own procedure. It behooves the man of science to realize this, and it behooves the old-fashioned metaphysician, who supposes that his method is distinct from that of science, to realize that the only fruitful philosophizing that is going on at the present time is at the hands of the philosophic scientists and the scientific philosophers.

Dewey's Instrumentalism.

One of the main contributions to this new conception of the relation of philosophy to science is contained in the instrumentalism of Professor Dewey. The main contention of this theory is that ideas are instrumental to action: they are secondary, derived *from* action, and they are teleological, dynamogenic, point forward *to* action, and, in so far as they win a permanent place as ideas, it is just *as* delicate types of action-systems.

The reflective or mediating modes of experience are instrumental to the immediate forms of feeling and conduct.

It follows that the formal logic which was elaborated out of relation to the emotional and volitional needs of life, and is consequently correct only in so far as it remains abstract, and valid only inasmuch as it refers to nothing in particular in the world of concrete values, — it follows that this logic will not meet the requirements of a scientific method which is seeking to explain the actual world of phenomena conditioned by human interests and purposes. The instrumental logic, in other words, is an attempt to make philosophy scientific and science philosophic, and pragmatism means instrumentalism in this sense.

§ 2. PHILOSOPHY AS METHOD

Philosophy is Synoptic and Synthetic.

When one reflects upon the diversity of human experience — with its science, industry, religion, art, society, government — he realizes the need of devoting some time to the task of trying to see it as a whole. This is the work of philosophy. It seeks to penetrate beneath the superficialities of everyday life, with its uncriticised assumptions, its

petty politics and futile dogmatisms; while it undertakes equally, on the other hand, to avoid the fallacy of over-specialization to which civilized man with his highly differentiated practical and intellectual pursuits is especially liable. To attain a view which shall be at once profound in insight and comprehensive in outlook, it is necessary to consider those general aspects of things which ordinary experience is apt to ignore, and to co-relate phases of reality which otherwise are apt to remain isolated because of the very exhaustiveness with which they are studied by different classes of men in their narrow fields of investigation and with their special methods of research.

Philosophy is synoptic and synthetic. But the problem is not simply one of correlation. Philosophy is analytic as well: it seeks to understand the differences and multiplicity as well as the identity and unity of things. It is interested in the distinctions men make, especially in how they come to make them. Philosophers too often have been content with the mere classifying of things, dividing experience into aspects such as Mind and Matter, Subject and Object, One and Many, Ideal and Real. But a true philosophy goes

Philosophy is the Effort of Experience to understand Itself.

back of such analysis and asks why we make these distinctions, why we divide here and unite there. It seeks the reason for the opposition of phases. It brings to consciousness the meaning of the antitheses of our common sense and scientific thinking, for the purpose of better understanding their underlying assumptions. It is concerned with distinctions and classifications because they stand for some fundamental method and law of our expanding life. Critical examination of the postulates of our thinking discloses many unanswered questions, many unsolved problems. But more important than the enumeration and classification of specific problems is the attempt to understand the nature, the origin, and growth of a problem anywhere. The problem of philosophy is the problem of the nature of a problem. It is human experience striving to understand itself. Philosophy seeks the underlying principle of an experience, whether it be an ultimate mystery or a practical issue of every-day life : it is the progressive systematizing of knowledge on the basis of scientific principles, with the aim of working out a method of managing experience.

Philosophy, thus conceived, is relevant to the needs of life, no less than art, religion, or

science. The place of science has long been admitted. Religion is now regarded as an organic part of human experience. The value of art is daily coming to be more adequately appreciated. But the value of philosophy for life is seen by comparatively few persons: it is regarded as a department of inquiry beyond the scope of the average man, if not quite foreign to his needs. But the truth is that philosophy is as intimately related to life as religion, art, or science, because it is the method implicit in them. Since science is the most controlled, accurate, critical, and systematic phase of human experience, we naturally look to it for the most important suggestions as to philosophic method. If the paramount importance of the scientific concepts be admitted, then philosophy may be defined as the science of the sciences, because it is the science of the principles of science. It is related to life even more intimately than any one of the special branches of science, since it embraces the underlying methods and principles of them all. Philosophy becomes itself a way of living: it is the living of life on a larger, fuller, deeper, truer scale: it grasps and holds together in a comprehensive synthesis the various strands

Philosophy is the Science of the Principles of Science.

which make up our complex life, striving to make such a synthesis as coherent as possible in the light of our present scientific knowledge of the universe. To act for the future as well as the present in the light of the past; to feel finely because discriminatingly; to think fearlessly but considerately; to live in terms of the more remote implications of our deeds; to see the whole in the part and the ideal in the actual; not to be satisfied with the immediate values which chance or impulse throws in our way, but to insist that they shall be mediated by other values not directly given: this is wisdom. And this is the truth which philosophy, the search for science, has to offer us.

Definition of Philosophy.

Philosophy may be briefly defined as the general theory of experience. It is *general* as distinguished from the more specialized fields of investigation. The searchlight of science must be supplemented by the world-view of philosophy. It is *theory*, as distinguished from practice, but it is the theory of practice. Philosophy is not mere speculation; it is the method of science, and abstractions are the tools. It is theory of *experience*: it attempts to explain the meaning of life as we live it, not the mysteries of a reality which lies

beyond. According to whether the emphasis is placed on "experience" or on "theory," philosophy is empiricistic or idealistic in its method.

Pragmatism, in the first place, is empiricistic. If philosophy is to be practical and personal and instrumental, it must begin with concrete experience, not with an assumed reality beyond nor with an abstracted aspect. It must begin with the full tide of life as we live it, and try to understand it from within, not seek to leap out of experience to some transcendental vantage-ground from which the procession might be watched from without. Nor will philosophy begin with such partial aspects as mind and matter, nor with such terminal problems as origin and destiny, but it will endeavor, by a patient study of the way in which experience goes on in the present moment of consciousness, to construct the law of the process by which it goes on in other moments. This is the empirical principle of pragmatism. As Professor Dewey puts it, Reality *is* what it is *experienced as*. Or, as Hegel long since phrased it, the laws of thought are the laws of things.

Empirical Phase of Pragmatism.

This empirical point of view has several important implications. It implies, for one thing,

that the distinction between experience and reality is not an absolute one, not an ontological distinction, as the metaphysicians say, but only a methodological or functional one. It no more represents a distinctness in existence than does the distinction of the How and the What of anything, or the distinction of process and content. Experience regarded from the point of view of *what it is*, its content, its filling of objects and events, we call reality. Reality, regarded from the point of view of *how it goes on* or the way in which it occurs in consciousness, that is, viewed as a process of evolution here and now, we call experience. A moment of consciousness is a sample of how reality evolves. An object in space or an event in time is a sample of the content of this evolving process. Reality viewed in longitudinal section, as a process, gives us what we call experience. Experience taken in cross-section yields a content which we call reality.

Reality and Experience.

In the second place, mind or consciousness *is* what it seems to be — a transformation-phase of experience, not a separate entity. The distinction of mind and body and their alleged disparateness and supposed par-

Reality and Consciousness.

allelism is a pseudo-problem created by the methodological inutilities of a prejudiced metaphysics. Just as the hypostasizing of the distinction of reality and experience gave rise to the tedious detour of the epistemological problem, so the erection of the practical distinction between the psychical and the physical into an ontological chasm has produced the paradox of mind and matter in metaphysics. Aristotle's doctrine of entelechy was nearer the truth, which sought to define what a thing *is* in terms of what it *does*, in terms of its behavior and functions, and in terms of how it came to be what it is, its genesis and growth. Consciousness, the mind, the soul, is to be defined as a physical object is defined in science: a molecule or an atom is defined in the physics of to-day as the sum of its attributes, the synthesis of the relations in which it stands. Consciousness no longer may be regarded as an entity, nor as the attribute or epiphenomenal manifestation of an entity; it must be defined, as everything else in modern science, as a relation or system of relationships. Reality, Lotze said, means standing-in-relations, a thing *is* where it *acts*, Being is Doing. If this is true, then consciousness is what it seems to be — a tran-

sition phase of the contents of experience under certain conditions in which they are undergoing reconstruction into something else. It is not a different kind of reality nor a permanent parallel aspect of material existence, but a mode of experience in the phase of metamorphosis into further experience.

Reality in the Making.

A third implication of this pragmatic empiricism concerns our relation to the making of reality. There is a sense in which reality is *given* and a sense in which it is *made*. As Mr. Schiller says, you may "find yourself in love," or you may "make love." You may wish for a chair and find one, have one given to you, or you may wish for a chair and invent one, make one. Is reality discovered or created by knowledge? Are the objects which form the content of experience revealed or constituted by consciousness? This is one of the age-old problems of philosophy, which has divided thinkers into transcendentalists and empiricists, nativists and evolutionists. Taking the two terms of the distinction abstractly, it seems that in the final analysis something must be absolutely given, on the one hand, yet, on the other, that something is absolutely created. It appears that there is nothing new under the

sun, and yet that everything changes. If all is given, then the apparent progress and freshness of our feelings is an illusion, and if any single part of experience is absolutely given, the whole must be given, as the absolute idealists have been logical enough to see. On the other hand, if all is created, what is to save us from solipsism? The answer is that neither term of the distinction is to be taken abstractly. *Given* means *taken as given* for the situation, while *made* or created means produced anew *relative to some interest* or need, not created *ex nihilo*. Our givings and takings, our acquiescences and imperatives, are not ultimate and abstract, but relative in the sense of relevant to the proximate needs of concrete issues. Taken abstractly, these complementary principles have significance only as limiting concepts like the infinite and infinitesimal in calculus; they are signs of operations to be performed, not absolute realities blocking progress. There is no experience in general or in the abstract, no absolute experience; experience is always in specific centres of concrete interest and value. Hence, questions of the absolute origin or absolute givenness of reality are unintelligible because irrelevant. We participate in the evolution of

reality by every moment of conscious experience. The truth has n't all happened yet, as Professor James says. Kant was right in a sense when he said that the understanding creates the world. But it is equally true that for any particular individual and for any particular moment of conscious experience, the high-lights of attentional consciousness are set over against a background of what, for the situation, must be taken as given — and this is the truth the metaphysical realists have built into a wall of separation between a subjective and an objective world.

The Idealistic Phase of Pragmatism.

These are some of the implications of the pragmatic philosophy as a doctrine of empiricism. But it is likewise idealistic, and this is not only consistent with, but absolutely indispensable to the integrity of the empirical side of its method.

The pragmatic philosophy, by virtue of the fact that it purports to be a *philosophy*, is a form of idealism. All philosophies are idealistic in the deepest sense of the word — they are simply developed ideas of the universe. Pragmatic idealism is only a closer knit synthesis of practice and theory than other forms of philosophy. If we define idealism as any philosophy

which finds the key to the nature of reality in ideas, then pragmatism is a form of idealism, since it is itself a theory, an idea, a conception, a philosophy of experience. There is no necessary antagonism between pragmatism and idealism, since there is no necessary conflict between practice and theory. Pragmatism is not opposed to theory, but only to bad theory; it is not opposed to ideas, but only to ideas that do not work in practice; it is not opposed to ideals, but only to ideals that do not stand in organic relation to life.

The idealistic phase of pragmatism is to be found in its theory of knowledge, in its doctrine of the relation of ideas to action. Thinking, it holds, *is* action in process of transformation into more adequate action; the pragmatic philosophy is only human action or practice passing into the idea or theory phase for the sake of evolving a more adequate practice. Whether pragmatism is idealistic in either of the other two historically important senses of the word, which hold respectively that ultimate reality is mental (metaphysical idealism), and that the objective world has no existence independent of a knowing subject (epistemological idealism), is easily answered: it is not.

Pragmatic Idealism.

These forms of idealism, as Mr. Schiller and Professor James and Professor Dewey in their different ways have shown, are simply methodological circumlocutions produced by the interposition of false issues by an aprioristic preconception.

As long as men stop their practice now and again to think, they will be idealists. As long as the process of experience is more than a mere blind rule-of-thumb, accidental fumbling, slow learning by the method of trial and error, as long as human progress takes place by experiment and invention as well as by repetition and imitation, the philosophy of experience must in the deepest sense of the word be idealistic. Ideas are not copies of realities beyond experience, but are certain contents which, because of their inadequacy, are undergoing revision in that mode of consciousness which we call knowledge: and consciousness and cognition are merely names for reality when thus undergoing reorganization from within. Ideas, as Professor Dewey says, looked at negatively and in relation to the practice which is breaking down, are simply facts which have come under suspicion. Thus we say that the sun-going-around-the-earth is a mere idea because it has

become doubted: we call it an illusion. Looked at positively, in relation to further practice, an idea is a plan of action; it is one part of experience used as a means of getting further experience. There is no chasm between the world of things and the world of thoughts; thoughts *are* things viewed *in process* of becoming something different from what in relation to the needs of former practice they have been. From this point of view there is no need for a timeless, processless, inscrutable Absolute to guarantee the integrity of a subjective-objective, mind-matter, ego-alter world: the only absolute required is the concrete process of experience itself. There is no absolutely absolute absolute, just as there is no absolutely relative relative. Absolute idealism and absolute skepticism are self-contradictory limiting conceptions, neither of which is true taken by itself, but each of which is useful in refuting the other by throwing it back upon the concrete process whence it is derived and where alone it is significant.

Quite the most delightful humor of the present philosophical situation is the way in which the pragmatists in practice repudiate pragmatism as a theory, while, on the other hand, the pragmatic theorists fail to see their own incor-

rigible idealism. Rotund in the complacency with which they regard their abstract ideals, which they sentimentally revere but never use, the actual pragmatists look with contempt upon the theory of their own practice when some ingenuous idealist seeks to formulate it for them. For what is pragmatic theory to him who is a pragmatist in conduct? It is heresy, blasphemy, anarchy — destruction of established ideals which must be protected at all hazards from any pollution by the "given case." He does not realize that he is destroying the only theoretically sound basis of his own practice, that his so-called ideals are simply masks to conceal the irregularity and irrationality of his practice.

The Pragmatists in Practice.

But the full humor of the situation does not appear until we turn to the supposed teachers of pragmatism — the pragmatists in theory. They are not real pragmatists, most of them, but idealists. They have developed pragmatism as a means of realizing a new ideal in philosophy which seems more valuable to them than any of the old ideals. The fact that the new ideal is not consciously present or clearly worked out does not alter the case. The function of the philosophical pragma-

The Pragmatists in Theory.

tist of the day is not to supplant the various forms of idealism which have held sway, but to make their ideals operative as forces in the world of actual conditions and causes. He brings ideals down to earth; he does not destroy them. The positive mission of the pragmatic theorist is to show men how to use ideals as genuine dynamic functional realities, instead of sentimentally worshiping them in their inviolable isolation. Pragmatism means, not the opportunism or expediency philosophy which too often is the only working theory of the man of affairs; it finds the ideal *in* the conditions, cultivates and guides its growth *within* the given case, and formulates it by reading off the "law of the process" by which those very conditions have given rise to the given case.

Men cannot get along, and remain civilized, without ideals. It is not only the lover, idolizing the object of his affection, who is actuated by ideals: the successful statesman, scientist, or man of business, is always an idealist. He has insight and outlook — a point of view — which transform the world of facts from a brute mass of obstruction and baffling perplexity into a systematic scheme or plan for bringing things to pass. His scheme may be false in certain particu-

lars, but he can no more get along without some centralizing intellectual machinery than a complex organism can get along without a central nervous system or a complex civilization without its methods of communication. Ideals are simply codes, customs, institutions, habits undergoing reconstruction in the medium of the direct emotional appreciation and rational insight of individuals. A philosophy must at bottom be an idealism because it is a theory of human progress — it seeks to deal in idea methodically with all the conditions by which man evolves an increasingly enriched experience. But experience is not thus mediated when certain standards, relevant in some past situation, are carried over bodily and unrevised into new conditions. This is the fallacy of most of the rationalistic and absolutistic forms of idealism which have held sway. Accepted types of thought and action are imposed on a new situation; and where the new conditions do not fit the rigid framework of the old standard, effort is made to force them into conformity with it. This is the obstructive aspect of absolutism against which pragmatism has raised its timely protest and its demand that *all* the factors of a situation must be represented *constructively* in the result.

Life is a game of skill, and pragmatism is an attempt to "play the game" as well as possible, since perforce we must play it. It is a philosophy of work, of practice, of labor, of the strenuous life. But it is not simply that. Since, as we have seen, it is not mere practice, but a theory of practice, it is idealistic as well. But pragmatism is more than either an empiricism or an idealism: it is an immediatism or mysticism in the good sense of the word—it is a philosophy of play and a branch of fine art. It provides for "moral holidays"; it is a philosophy of that culture which in its leisure is not idle; it finds a place for the feelings and values and ends of life as well as for conduct and ideas and the means of living. The simple life is as much its goal as the strenuous life: the simple life!—that "last refuge of complexity!" It is not getting away from complexity that pragmatism recommends, but controlling complexity in relation to the attainment of the values of life; not the simple life, but the simplified life. And among other means of the control of cultured living, a true philosophy finds its place: first, as a balance-wheel to the tangential tendencies of lop-sided common sense, with its uncommon stupidities and

Pragmatism a Philosophy of Life.

rigidities and foreshortening of view; second, as a clearing-house for balancing up the credit and debit accounts of science in relation to this great problem of the control of the conditions of living; and third, as an enhancement of the appreciation of the values of life in emotional and personal terms, by seeing all knowledge and conduct in their widest cosmic and deepest spiritual implications, and feeling with Kant and Tennyson the relation of the flower in the crannied wall of one's own dooryard to the stars above and the moral law within. This is pragmatism, and this is a philosophy which must recommend itself to men and women of to-day.

§ 3. THE FUNCTIONAL POINT OF VIEW

The new philosophy is a pragmatic idealism. Its method is at once intrinsic or immanent, and organic or functional. By saying that its method is immanent we mean that experience must be interpreted from within. We cannot jump out of our skins, as Professor James says; we cannot pull ourselves up by our own bootstraps. We find ourselves in mid-stream of the Niagara of experience, and may define what it is only by working

Method must be Immanent.

back and forth within the current. "We don't know where we're going, but we're on the way."

To be at once consistent theoretically and useful practically, a philosophy must start, not with some abstraction such as the Great First Cause or the Absolute, but with concrete work-a-day human life. All the problems of origin and destiny which contain the unsolved enigmas of metaphysics need to be restated in terms of present experience. Such a procedure, if it does not actually reduce the number of mysteries which lie about us, will at least prevent our multiplying them unnecessarily. All the real mysteries of life lie in these questions of origin and destiny. Philosophical thinking has too often begun with the attempt to solve problems of a remote past (e. g. creation) or a remote future (e. g. immortality). It should begin with the attempt to understand experience here and now, and from that as a basis proceed to a consideration of these terminal problems. Not that the starting-point and goal are unimportant, but that when we first come to consciousness philosophically we find ourselves already engaged in the conduct of life. This is the only point from which we can properly begin to philosophize — this sim-

ple naïve face-value of experience, in which subject and object, the ideal and the real, while ostensibly standing apart, are yet related in a practical way for the needs of action.

The Fallacy of Abstractions.

Most philosophers have erroneously begun with some abstracted aspect instead of with the concrete heart or kernel. Cutting experience into pieces and settling down on some particular fragment that seems to embody the important element, each attempts to reconstruct the whole. They arbitrarily split reality into parts, and then write volumes to tell how to get these together again. We must recognize the value, the necessity, of abstractions, of course; but we must not forget that they are instrumental in their function. Our reflective experience does involve abstractions from the concrete totality of action or feeling; the unity becomes a duality or plurality: but it is for the sake of synthesis on a higher level. Psychology, for example, has done for the world of thought what physical science has done for the world of sense. Physics reduces the material world to certain abstractions — molecules, atoms, vibrations, electrons. Psychology reduces the world of consciousness to certain abstractions — sensations, ideas, feelings, volitions. Each fails

to see that the abstraction has meant, not the exclusion of that from which the abstraction was made, but its implicit assumption. Physical and mental science each so thoroughly takes the other for granted, that it fails to give that other its due. Psychology which deceives itself into believing that it can get along without the help of experimental science becomes transcendental. Physics which tries to get along without the help of psychology becomes positivistic. The truth appears only when we observe how these abstractions arise and what end they serve. A philosophy or a science which begins with an abstraction and takes it for the whole has made a false start. Both should begin and end in concrete experience.

Of course, any characterization of experience must be in a sense abstract. We cannot think save in terms of ideas, and ideas are always partial aspects. Even in asserting that experience is concrete we employ an abstraction. But, as we have seen, one cannot otherwise *say* or *think* anything. Our aim should be, not to avoid abstractions, since in that case we should not be able to think or speak at all, much less write a philosophy, but to abstract in an orderly and critical manner, to recognize the morphological

relations, as it were, among the abstractions which we are compelled to make.

By organic or functional is meant that all distinctions in theory are true only in relation to the specific situation within which they are set up. There is no truth in general or in the abstract: there are only truths. It further means that in the case of all the dualisms of reflective thought which have occasioned so much controversy in the history of philosophy, each abstract member of the dichotomous distinction is true only in relation to the other. Does a man walk more with his left or with his right leg? asks Professor James. If he is lost in the forest in the northern hemisphere, he may perhaps be said to walk more with his right leg when he goes around in a circle to the left; but more important than the fact of inequality is the fact that he must use them both and that they must coöperate to a common end, if he is to be said to walk at all. When I follow the squirrel around the tree, do I or do I not go around the squirrel? As Professor James here too has pointed out, I do, and I do not, go around the squirrel, according to which situation of "going around" is under discussion. Only by a functional interpretation of

Method must be Functional.

the time-honored antinomies is it possible to put any practical meaning into the dualisms of actual and ideal, finite and infinite, one and the many, subject and object, mind and matter, ego and alter, reason and faith, good and evil, right and wrong, experience and reality, and the host of other antitheses which the dialectic ingenuity of sapient man has teased out of the intricate meshwork and living tissue of concrete experience.

"A system is not so important as a method." Whenever science discovers a new mode of thought, all its work has to be done over again. Philosophy is the attempt to rethink the universe in the light of the new point of view. Evolution is the latest contribution of this sort. The lesson of biology for the twentieth century is found in a more organic method in its science and its philosophy. We have come to see that we must interpret product in terms of process, being in terms of becoming, life in terms of growth, and structure in terms of function. We have found that each phase of life requires to be interpreted in terms of every other phase, just as an organ can be understood only in terms of the entire organism. Generalizing for a theory of experience, this means that

A Principle of Method.

all categories are organic and functional, not fixed and given. A true philosophic method begins the analysis of experience from within, and interprets the various contents thus analyzed functionally in terms of each other and in terms of the common process.

CHAPTER II

EXPERIENCE

§ 4. THE PHILOSOPHICAL CONCEPTION OF EXPERIENCE

PHILOSOPHY is the general theory of experience. Its primary task is to explain the meaning of life. To do this, it must begin with our practical activities and attitudes, and use these as a basis for testing all the abstract principles of science and metaphysics. Immediate personal experience — this is the starting-point. We find, to be sure, that a complete knowledge of our own experience ultimately implies a theory of the entire universe. But whatever the outcome, our philosophy must be grounded upon an empirical basis of concrete values and events.

Philosophy is Theory of Experience.

But what is "experience"? it may be asked. We know until we are asked, and then to answer is not as easy as it seems. We speak of a man of wide experience, of having passed through a trying experience, and of experiencing religion. And, in a

But what is Experience?

way, we know what we mean by these expressions. But the word becomes ambiguous the moment it is used in a general sense. Etymologically, experience means experiment or trial; and this meaning lingers in the contrast we draw between personal experience and hearsay, and in the account of his war-experiences given by the veteran. But the word is coming to have a wider meaning when used to express the totality of things for a person's consciousness. Experience, in this sense, is the whole web of life, the universe from an individual point of view. This is the meaning the term has come to have in the idealistic and pragmatic philosophy of the day.

Experience embraces what-I-call-my-self-and-all-that-I-feel-and-know-and-do. It is the dynamic system or process of my life, with its filling of facts and ideas and events. Every particular experience is bound up with a multitude of other experiences. To really know one little flower, as the poet reminds us, is ultimately to know everything. Experience is not any particular part or aspect, it is not one phase abstracted from the rest: it is all the parts as they interpenetrate each other in the whole. Of course any part is experience, for even an abstraction is real. But it is not the full reality,

Experience is a Dynamic System or Process.

since it always points to the larger system of which it is a member.

Experience, viewed in this way, includes all that might possibly happen as well as all that has actually taken place or is now taking place. It extends back into the past and reaches forward into the future. Even the possible, to the extent that it is a genuine possibility, is a part of experience. My ideals are not yet actualities, but they play a very real part in shaping my life. There can be no sense in speaking of reality beyond or outside of experience, since this very judgment of transcendence or externality itself constitutes the relation which it sustains to experience. Reality is what is experienced—whether actually or ideally, whether as fact or as possibility. The world of possible experience becomes, if anything, the more important for civilized thinking beings who live more and more in terms of ideals.

Experience is my Universe.

Questions fairly spring at one who has the temerity to follow this line of thought to its logical conclusion. "Do you mean to identify my experience with the whole of reality? If not, whose experience is intended when you say that reality is what is experienced? If there is no reality beyond experience, what becomes of

the experience of my fellow-men? Do you mean that yonder tree or star is part of my experience as truly as my present emotion or memory-image?" These questions cannot all be answered at once, but before we have finished we shall have something to say in reply to each of them.

In answer to the first difficulty, we repeat: Experience is nothing less than the whole system of things. It is a synonym for the universe, for the totality of the diversity of things to which I am in any way related. This includes the other side of the moon, which I never have seen, and the language of the inhabitants of Mars, if they have any. It includes the first whorls of the star dust and the final catastrophe, whether these be realities or simply creations of the scientific imagination. If it be objected that these are things which by their very nature never can be experienced, it may be replied that in that case we could not even now be talking about them. They must be real in some sense, to be the matter just now under discussion. It is true that I have never had a visual perception of the other side of the moon, but I know enough about the moon to be sure that it has another side, and

This includes the Possible as well as the Actual.

this knowledge is one of my ways of experiencing it. The other side of the moon has all the reality that the sciences of physics and astronomy express by the judgment that it is a spherical satellite of the earth spinning with it through space. All the indirect judgments of science, all the inferences by which such realities are certified, are themselves modes of experiencing, as truly as what I call immediate perception of objects now stimulating my sense-organs. Not only so. If I speak of it only to deny its existence, I have thereby experienced what I call the other side of the moon to the extent at least of making it the content denied. It has an existence as the subject of this negative judgment. There is nothing of which I may speak, nothing that I can think or imagine even, which does not in so far become a part of my experience. The Centaur has reality as an art-form, even if the zoölogists do not find it roaming the forest.

To-be and *to-be-experienced* come to the same thing. Things *are* what they are *experienced as*. Everything that we experience is equally real. Even illusions are real; they are *ideal*, as contrasted with *actual* realities. In this "immediate empiricism,"

Immediate Empiricism.

as Professor Dewey calls it, our philosophy is fundamentally grounded. Reality *is* experience. These two words describe the same whole from different points of view. "Reality" emphasizes the content of experience. "Experience" emphasizes the process of reality. The one states *What* experience is, the other *How* it proceeds. Physical science has dealt so exclusively with the What, the content, that it has come to treat the facts of the universe as if they existed independently of the process. Psychological science has treated mental process in abstraction from its physical conditions and results, until it has come to assume the existence of a separate world of mind or consciousness distinct from its content. The truth is that there is but one reality: the content of experience. There is but one experience: the process of the evolution of that content. We know nothing of what "things" are in themselves, apart from a possible experience. There are no "thoughts" in the abstract. Things are the contents of thoughts, while thoughts merely represent the internal metamorphosis of things.

Two great discoveries of science have transformed our philosophical conception of experience: the idea of the dynamic nature of matter

and the doctrine of evolution. What a thing *is* can only be described in terms of what it *does*, its present *nature* in terms of its *genesis and growth*. Experience or reality is self-sustaining and internally differentiating. If it be asked, "Where does this Experience come from?" the question is irrelevant. Experience does not "come from" anywhere. It *is* here. "How experience became we shall never find out," says Professor Dewey, "for the reason that experience always is. We shall never account for it by referring it to something else, for 'something else' always is only for and in experience." As Professor James puts it, "Though one part of our experience may lean upon another part to make it what it is in any one of several aspects in which it may be considered, experience as a whole is self-containing and leans on nothing."

There is Nothing beyond.

§ 5. THE SCIENTIFIC VIEW

Science is the most elaborate attempt man has made to understand his experience. Beginning with a study of the external world, because it was easier to investigate and yielded more immediate practical returns, he has come at last in modern times to the study

Science.

of the more elusive but not less important facts of consciousness and personality. The aim throughout was to discover and state the laws of nature in order to evolve a better method of controlling its forces in relation to the needs of human nature. As yet, however, science has succeeded in accomplishing this only in certain limited areas, where the conditions have been favorable and where the ignorance and superstition of man himself have stood least in the way.

Physical Science says Nature is Mechanical.

The earliest systematic account, given by the physical sciences, interprets the world after the analogy of human methods of production. Nature is a mechanism. Atoms are moved from without through empty space. Material substance is the permanent core in which the physical attributes of extension and solidity inhere. This lump-theory of reality prevailed from the time of Democritus to the founders of modern physics. But with the progress of scientific inquiry, especially with the advance of experimental investigation, the fact of change or motion became more and more prominent, while the conception of an underlying substrate gradually receded. The existence of matter was not denied, but its utility in its old static form, as a principle of explana-

tion, vanished in the light of a new understanding of the nature of motion. In place of a dead inert substance, operated upon from without, were substituted the positive conceptions of energy and force. In place of a static we have a dynamic theory of the nature of reality. Matter-at-rest becomes merely an expression for forces-in-equilibrium. An atom is a balance of vector activities. Such is the teaching of the modern energistic physics.

But while this dynamic view is transforming physics, another group of sciences is coming into prominence. Although biology existed alongside of physics from the first, the nineteenth century was the epoch of its greatest development. The statements of physics and chemistry are not the whole story. In addition to being a mechanism, nature is an organism. The universe is not simply a machine, it is a living machine; it is organic. Here, again, we see the progressive change from a static to a dynamic conception of life. Early biology was content with a doctrine of special creation, fixed species, and a distinct vital force. But with the rise of the genetic and comparative method in science, biologists came to see the essential unity and continuity of all organic processes.

Biological Science says Nature is Organic.

The concepts of heredity and transmission, variability and selection, development and evolution, are the counterpart, in biology, of the concepts of ceaseless change and motion in physics. And here, as before, scientific thought did not rest until it had generalized the idea. The world is a living growth, there is a cosmic life and evolution. At first this idea was restricted to the plant and animal world, but as investigation showed the close interdependence of the vital and the mineral realms, the difference between the inorganic and the organic seemed to reduce to a mere difference in degree of complexity and organization. If the chemico-physical laws are to be extended to the explanation of organic processes, then the biological categories must, in turn, be carried back to re-interpret the world of matter and motion. If vitalism and mechanism are interpreted in terms of each other, the result is at once a profounder sense of the organic character of the universe and a recognition of the significance, for the ends of life, of mechanical necessity.

The next step in the evolution of the scientific statement of reality was taken by psychological science. In addition to matter and motion, life and evolution, we find consciousness and personality. Here, as in the previous cases, the truth

lies in universalizing the laws of the new science. Consciousness, if relevant at all, has a significance for the whole system. It must be extended to the entire universe. It is mechanical, it is organic, it is mental. And, with the advance of sociological science, we shall have to add that it is in some sense social. If the work of philosophy is to correlate the methods and results of the special sciences, no one of them must be ignored. The ideas of consciousness and personality, of spiritual values and social relationship, as well as the ideas of matter and energy, of protoplasm and cell-life, must find recognition in our explanation of reality. The objection based on the doctrine of the conservation of energy, that the mental is not measurable, wholly disappears when we see that modern science is really treating mental phenomena under cover of other names. The spiritualization of the idea of matter which is taking place in the new physics shows the retroactive effect upon the basal concepts of both physics and chemistry of the recent development of biological and psychological science.

Psychological Science says Nature is Mental.

The difficulty as to the nature of the soul resolves itself into the question of the re-thinking of matter in more dynamic terms. The only

hope of clearing up the apparent incommensurability of mind and matter is for the so-called mental and material sciences to get together on some common basis. This will probably first occur in the case of the two sciences of neurology and psychology, which at present are so intimately associated in the study of the human individual. The need has frequently been urged of some category common to the physiologist and psychologist, in terms of which the problems of neural structure and mental function might be discussed without arousing metaphysical prejudices. Such a category is found in the concept of action or behavior which is coming into use in the fields of comparative physiology and comparative psychology. It is too early to predict in detail the lines along which this approximation will take place, but it is safe to say that there will be considerable revision of working concepts on both sides. This is already seen in the effects of the physicist's insight into the energic nature of matter and the biologist's conception of the nature of organic processes. If biology regards organic behavior as only a more complicated instance of chemical and physical law, then the study of electrical and other dynamic

The Sciences meet in the Concept of Action.

properties of matter, which is affecting chemical and physical ideas, is bound finally to reach biology with transforming effect.

In a similar way the conception of the nature of consciousness is undergoing reconstruction in psychological science. The traditional formula which has been satisfied with some form of dualistic statement, postulating a soul back of consciousness as the older physics postulated matter back of motion and the vitalistic biology postulated vital force back of organic processes, has already been displaced by the so-called "psychology without a soul." Scientific psychology to-day views the relation between consciousness and the brain as a fact to be explained. It no longer begs the question by a doctrine of parallelism. There is no blinking the facts of brain-structure, nor of mental function: the problem is to understand what we mean by each in terms of the other. This it has been impossible to do in the past because of the diverse historical conditions under which the two sciences evolved. Biology had its roots in the natural and positive sciences. Psychology began as a branch of metaphysics. But now that we are coming to regard all science as the study of activity, and to see that the lines

Even Consciousness must be explained as a mode of Activity.

between the special investigations merely represent different interests and a convenient division of labor, there is hope of finding out what reality is in terms of consciousness and its laws as well as in terms of life and energy. For the so-called mental and social facts of the universe will finally be explained only when they shall be reduced to terms of this common denominator of all science — action. While beginning with a statement of What-reality-is, science has at last come to the question, How-experience-goes-on. From the naïve primitive conception of reality as a content independent of experience, it has come to devote its attention to experience as a process, and to recognize that Activity is the very essence of Being.

§ 6. THE SOCIAL NATURE OF EXPERIENCE

Social Science.

The last of the categories evolved by science in its attempt to understand reality is that of the social nature of experience. Nothing is borne in upon one with greater vividness and force at critical moments of his career than the vital and intimate way in which the events of his own personal experience are bound up with those of his fellows. Deeper than the feeling of individual isolation, poignant as

that may be, is the sense of social solidarity which at such times appears either as an insurmountable barrier or as an infinite opportunity to the realization of the self.

This recognition of the social nature of experience, like its counterpart, the clear consciousness of individuality, is a relatively late product of human civilization. The two ideas properly emerge together. But European ideals of culture have been so dominated for two centuries by an isolative conception of the self, that the truth concerning the fundamentally social nature of consciousness has been overshadowed. It is only beginning to be realized in all its implications, that a sound theory of democracy, of moral freedom, and of immortality, is bound up with a true understanding of the mutual relations of the individual and society.

A study of the characters of the primitive attitude of mind gives us a glimpse of the basic elements which enter into the social constitution of human experience. The primitive mind is protoplasmic. Distinctions which in our mature and articulated knowledge seem so clear and immutable are in a state of vague incoherence and unanalyzed confusion which makes even the knowledge and

The Primitive attitude of Mind is (1) Naive,

science of earlier ages seem fantastic and grotesque. There is no differentiation of the real significance of things from their face value. Things *are* what they *seem*. The attitude of primitive man is naïve and uncritical, undisturbed by the dualisms which so perplex our more sophisticated thought.

(2) Practical.

He is immersed in the practical affairs of the struggle for life, in the proximate problems of food and sex. His conduct is determined by custom and convention. When he thinks, it is only because he has to, and to solve the most pressing present problems. Even his language-symbols are still unanalyzed, a name and its object being so intimately identified that insult to the name of a thing is regarded as an injury to the thing itself. Hence his apparent imaginativeness — apparent only, since what for us are his myths and the wonderful creations of his fancy, for him are the vaguely glimpsed and crudely formulated realities of his every-day life.

(3 Integral.

His life is a rude unification of vast blocks of concrete experience, which for us are made up of a multitude of discrete details. It is integral, but the principles of unity and continuity which bind its parts together are

vaguely and inconsistently conceived. Unconsciously to himself, he is a daring monist and a helpless dualist — but never dreams what it means to be either. For this reason his unfeeling cruelty to living things and his unthinking personification of inanimate objects cannot have the significance for him that they have for us. There is an unsophisticated transparency of purpose and at the same time such a depth and reach of belief in what to us is an irrational occultism, that his experience seems an utter chaos; while in truth its apparent lack of coherency is due chiefly to our failure to appreciate the simplicity of the elemental needs and adjustments which are its sole principle of organization.

For, while the germs of our present elaborate differentiation of inner and outer life are there, they are there only in implicit form. He is the creature of habit and tradition — ignorant of the laws which he obeys. He is superstitious because, in his religion, he is, as still for the most part we are, emotional and prerational. Magic is his crude science and myth his still cruder philosophy. Code and rite dominate his moral life because he has not reflected upon the social and political motives which un-

(4 Implicit.

derlie them. His labor is narrow and servile because he has not brought to consciousness the meaning of his own activities. His mind is bovinely peaceful because he is too unconscious of ideals to be discontent.

The conceptions of self and society, as would be expected, are likewise naive, practical, total, and implicit in character. Personality originally was conceived as wider than what we call the individual, in Roman law the "person" of a free citizen, including his slaves and domestic animals. This apparently is a relic of the primitive state of society in which the individual has not yet become conscious of himself as an individual. What we call personality is the result of social selection and division of labor. Some member of the group, because of unusual native sagacity or acquired skill in providing for the needs of the tribe, becomes recognized by the primitive horde as their natural leader. This serves at once to define in him this capacity for leadership, and to develop the group consciousness. While in one sense the instrument of social progress, personal initiative is thus in another sense itself a social product.

The Ideas of Self and Society.

Along with the individuation of society there takes place a corresponding socialization of

consciousness in the self. His mind mirrors the spiritual values of his social environment, as his brain maps the progressive elaboration of sensory and motor adjustments on the periphery of his organism. It follows that no self is impervious to other selves. Society is a vast plexus of interweaving personalities. We are members one of another, as the various parts of an organism coöperate in the common life process. The individual is not an impenetrable atomic unit, but the social whole coming to consciousness at a specific point. Personality and consciousness are not so bound up with my individual organism that other persons cannot share in them, but are a social synthesis which, indeed, has no existence apart from individual persons, yet expresses relationships which go beyond this. Consciousness is the centre of social osmosis, developed in the individual at the point of attrition with other individuals, through which the social values find their way from self to self. It is impossible for a human being to get away from this social aspect of his consciousness. No man is alone even when he is by himself. An ascetic self is in so far not a self.

The Self.

If it be objected to the above argument that

it posits a social consciousness over and above the individual consciousness, the reply is ready: This is chiefly a matter of the meaning of words. The same objection has been made to the conception of a social organism, on the ground that society is simply the aggregate of individual organisms. But when the criteria of the organic are applied — its self-maintaining, self-perpetuating character, and the reciprocal relation of its part-processes — it will be found that society is, if anything, a truer example of an organism than the body of the so-called individual animal or plant. Society is not an organism in the sense of having legs and arms, lungs, stomach, and a nervous system. But neither is an amœba. What we call an individual organism must be interpreted in terms of society as well as society in terms of what we call the individual.

Society.

The mere fact that in the case of human beings the so-called individuals are separated by a certain distance in space instead of constituting a colony or compound individual, as in the case of the sponge, does not render it any less true that they form an organic whole. "The cell, the individual, the race, are merely units of different order in the world of

The Social Organism.

living substance," says Professor Davenport. Individuals in human society, most of the time, are parted physically by inches, feet, miles, or a hemisphere, while the individuals of a sponge are separated by only a cell-wall. What is the fact of a micromillimeter or a mile? If we could look at the human body with a microscope of sufficient magnifying power, it would be seen that its molecules are relatively as far apart as the different individuals who make up society.

By a similar line of argument it may be shown that social consciousness is a reality. The trouble is not so much with the sociological, as with the psychological categories. The individual mind is no more an entity which you can locate in some particular place or regard as a distinct occult force than is the social mind. Both are statements merely of observed uniformities in facts. The individual mind is the organization of the actions and feelings and thoughts which are focused in a given organic system. The social mind or consciousness is this same fact viewed from the point of view of the system within which this process of organization is taking place. As the social organism is an organic whole through the reproductive nexus in time

The Social Consciousness.

and space, so the social mind is an organic whole through the coöperative participation of selves in a continuous experience — for however discrete our individual centres of consciousness may be, our commonness is equally, if not more, fundamental.

The Uniqueness of Consciousness.

There is no mysterious uniqueness about consciousness. A great deal of nonsense has been written about its unshareability. It is often remarked, as if it were a profound insight, that one can never really get into another person's consciousness. But this is not as extraordinary as it has been represented to be. If an adjustment is being made and I happen to be in the focus of that adjustment, and myself, as a part of the whole, coöperating in constituting it, then, of course, the rest of the universe (including other members of society) will be out of that focus in the margin somewhere. Two persons could not very well be at the same focal point without coalescing into one. And if consciousness is simply the process of the universe when and where it is undergoing tensional transformation, then it is no marvel that no other individual feels this tension just as I do. I *am* this centre of transformation, this focus of adjustment, while

yet it is the focusing of the entire system. Any given system has but one point of highest tension (in consciousness), and to say that this is not shared is only saying that a thing is itself and not everything else at the same time. There is a sense, to be sure, in which everything is identical with everything else; but if there were absolute identity there would be just one Thing in the universe: there would be no "things."

Karl Pearson has suggested that if the brains of two persons could be connected by means of a commissure of nervous tissue, their experience would be welded into one. But such an hypothetical connection is not necessary: the experiences of different individuals are fused in all sorts of ways as it is. Since the dawn of civilization, man has evolved chiefly in terms of extra-organic changes. Instead of a further development of the organism, there has been an evolution of the environment, largely by man's own conscious selection. The variations and rapid advances in his progress have been made possible by the mechanical extensions of his sensory and motor organs represented in the complex machinery and appliances of industry and science. The psychological centre of gravity has shifted from the organized

Extra-organic Evolution.

mass of protoplasm he calls his body, and falls outside somewhere in that larger extension of his personality represented by his inventions, his institutional life, his social status, his reputation, and all the culture-symbols in terms of which he now lives.

The civilized man's consciousness is not confined to his cranium. Indeed it is doubtful if it is at all relevant to speak of "the seat" of the soul. The human individual is the social whole undergoing readjustment at its points of transition and reorganization. The study of consciousness is not concerned with a mysterious occult entity residing somewhere inside one's skin or in one's head. Consciousness is not something bound up exclusively with the sensorium of the individual. Consciousness is, what the word suggests, the knowing-together of estranged aspects of the social whole. It would be just as significant to say, "It thinks," or "Thinking is going on," as to say, "I think." One often indeed feels just this to be true — that his thinking is determined for him by the influence of other personalities rather than by his own choice.

This problem of the supposed uniqueness of consciousness is no different from that of every leaf and blade of grass, of every atom and star.

The individual represents a node or nisus of energies in a dynamic system. It is an historical accident, one might say, that my consciousness is so peculiarly mine. It may be a sign of my limitation. Instead of being a mark of my superiority and individuality, it may be a mark of my unsociality and isolation. Extreme individuality becomes insanity. The ideal type of consciousness toward which the race is moving is one in which the individual becomes a more and more organic expression of the social whole. True individuality is not uniqueness, unlikeness, isolation, the possession of unshareable consciousness, but the ability to bring to a focus the widest range of social forces. Individuals are pivots upon which experience turns, foci into which consciousness converges and whence it irradiates, media by which experience is handed on from one member of society to another. And psychology, from this point of view, is the "attempt to state in detail the machinery of the individual considered as the instrument and organ through which social action operates." (Dewey.)

The Social Nature of the Self.

§ 7. THE UNITY OF THE SELF

Individuality.

It follows that the individual has only a functional identity. The water of Niagara is constantly changing, but the form of the cataract remains. The material substance of my body changes, but the continuity of my selfhood is recognizable throughout the changes.

On the open plains in the Western desert a slender column of dust rising perhaps one hundred and fifty feet in the apparently still air may be seen slowly moving at a rate at which a man might walk, sometimes pursuing a uniform path, at others suddenly turning. Sometimes the spectre hastens, as though urged on by a sudden impulse. Again it loiters, as though unable to make up its mind. The appearance may endure for hours and may be traced for scores of miles over the trackless plain. The sand in it is continually changing, as is the component air. The vortex is the result of the union of equilibrated forces and is just as much a real object as is a tree or a man. It is an individual, but its unity obviously consists in the perpetuation of a definite form of coördinate activity.

This beautiful figure from Professor Herrick furnishes a perfect illustration of the functional identity of the self. Consciousness, *a* conscious-

ness, *my* consciousness, like the vortex of dust, has only a functional unity and continuity. Its individual *Being* consists of what it persists in *doing*.

This conception of the nature of individuality may be illustrated by its bearing on two of the most momentous problems which have agitated the human mind — the problems of freedom and immortality.

The Problem of Freedom.

If I am a part of the whole, if I am a focus of the world-energies, then I am as genuinely real as any other part of the system. In being myself I participate in the reality of the whole. And if the system is autonomous, then as a functional member of the system I share in its spontaneity and freedom. I am not the whole system, I am a functional part only: my activities, therefore, are determined by the laws of the activity of the whole. But in so far as I am a functioning organ in the universal organism, the system is what it is because of what I am, and to this extent I am free. I am not free *from* or *in spite of* the system in which I function. My freedom is realized *in* my functional relationship to the system *through* the laws which bind me and it into a dynamic whole. This is the meaning of Hegel's famous

saying that freedom is the inner truth of necessity.

And what is true of the relation of the individual to the cosmos is true of his relation to society where the problem of freedom becomes a concrete and practical one. The moment we come to speak of freedom specifically, we have to deal with conditions. Liberty does not mean that activity is independent of conditions. It means that the conditions are under control. Abstract freedom does not exist. Freedom is intelligible only as signifying opportunity to act. The only machinery by which an individual can control the conditions of his action in a complex society in which he is dependent at every turn upon his fellows, is by the organization of those conditions. But organization is not incompatible with freedom. It is the very instrument by which freedom is achieved. The organization of labor, for example, is the indispensable prerequisite to the control of the conditions upon which the freedom of labor depends. Freedom means control. Liberty means law. It means that the activity of the individual must be regulated with reference to the rest of society.

Freedom means Control.

But control and law imply intelligence. The

ignorant man is not free. The emancipation proclamation did not liberate the negro. The savage roaming the forest is not free. He alone is truly free who has intelligent mastery of the forces about him whereby his purposes may be realized. The problem of freedom is not simply the problem of the relation of one act to another act, or of the relation of the act of one man to the act of another man. It is the problem of the relation of intelligence to action. A man is free when he knows how to act efficiently in a given situation. He is free when he has control of action in and through a true method of action. He only is free in a given situation who, by his intelligent grasp of its true significance, can adjust himself in the specific conditions.

Control implies Intelligence

Freedom does not consist of a certain number of original and inalienable rights. The possession of these so-called natural rights does not constitute freedom unless the rights are exercised. The only real freedom possible to the individual member of the social organism is the opportunity to bring into play the capacities which are latent in him for expressing and organizing the activities of that very social organism of

And Organization of the Conditions of Action.

which he is a functional part. His liberty does not consist in shaking himself free from the organic bonds which unite him to society, but in functioning as a part of the whole in such a way that his acts coöperate with the acts of every other similar part for the life and progressive growth of the entire system. It is not the individualistic self but the self-in-society who is free. Sovereign and subject are not separate persons in a true democracy, but each is at once governor and governed. The individual gives laws to himself because he is more than a mere individual. He is subject to laws he coöperates in making.

Illustration of Industrial Liberty.

To revert to the illustration of labor organization: The socialization of industry is the only way to secure complete economic freedom for the individual worker. The laboring man is beginning to realize this. He is coming to see that, if the individual has the right to work, society is bound to provide the conditions which shall make it possible for him to exercise that right. Otherwise it is not a right. Liberty to work, in the abstract, with no concrete opportunity for carrying it out, is not a right: it is a delusion. Rights (freedom) and laws (organization) are correla-

tive. The organization of labor is the attempt to control the conditions which will make this abstract right a concrete fact.

Personal liberty can never in the future mean just what it was conceived to mean before the organization of industry. Insistence on the doctrine of individual rights, as that is commonly understood, is a kind of reversionary atavism. It has already become the basis for monopolistic abuse on the part of capital. It is becoming the basis of similar abuse on the part of organized labor. The only escape is a more organic conception of what is meant by individual rights and by personal liberty. This can be attained only by grasping the new conception of the functional nature of individuality. Industrial organization imperils liberty, if by liberty we mean the abstract individualistic conception of a past century. But in the larger view of the individual this is the very instrument whereby a truer conception of liberty is to be worked out. We may even go so far as to say that the individual must lose his liberty — the liberty for which the enthusiasts of the eighteenth century bled and died — if he is to be truly free, if he is to gain freedom as a social individual. In the new industrial democracy

which is upon us no man can be his own master in the sense of the older individualism. His liberty is realized through the very widening of selfhood which results from coöperation with his fellow-men.

The conception of immortality also turns on the nature of individuality. We have seen that it is the very essence of selfhood to be passed on to others: it is social. Therein lies its immortality, paradoxical as the statement may seem. Apparently this denies personal and conscious survival of death. But such is not the case. It is indeed the only basis on which a satisfactory doctrine of immortality can rest. In spite of theological arguments from miracles and revelation and from the nature of God, intuitional arguments from innate ideas, ethical arguments from the nature and needs of man, idealistic arguments from the alleged priority and superiority of spirit, psychophysical arguments based on the apparent control of mind over matter, evolutionary arguments from the demand to its satisfaction, and arguments of the physical scientist based on the indestructibility of matter and the conservation of energy — in spite of all these arguments and others that might be enumerated,

The Problem of Immortality.

most persons find their faith in a future life scarcely more than a wish. And why? Because the self for whose immortality they hope is an unreal abstraction. The trouble is not that they believe in immortality, but that they ascribe it to an impossible self. The difficulty lies in the conception of personality. The self is conceived as a particularistic entity, with barriers to other selves. While, in society, individuals are recognized to be functions of each other, at death they are supposed to shrivel into isolated and alien units. With such a conception it is impossible to state a rational doctrine of the life after death.

Sex, Birth, and Death.

The problem is intimately connected with three primal facts of social life — sex, birth, and death. Death is the precondition of life, and, like birth, is a process, not an event. The problems of degeneration and regeneration, of destruction and reproduction, are solved in the same breath. It is only the creature that is born that can die. But what is birth? Answer this question and you have answered the other. Birth and death enter the world with sex. Moners are immortal, says Weissmann. They do not die because they are not born, and they are not born because there

is no such thing as sex, or rather they are bi-sexual, which amounts to the same thing for the present argument. Death evolved, the biologists tell us, as the price paid for the higher organization brought about by sexual differentiation.

But let us not be misled by mere words. What are meant by birth, life, death? Life does not begin with a minimum of vitality, rise to a maximum and then decline again, as is ordinarily supposed. The acme or climax is at the start, and life itself is a process of dying, a gradual loss of vitality. Death is going on during what is popularly called the life of the individual, the moment called death being but the culmination of a process which has in reality covered the whole period of life. Hence it is literally true that in the midst of life we are in death. "The organism dies because it grows."

Birth is a Lifelong Process.

But if biological science compels us thus to interpret life in terms of death, it equally opens up the possibility of interpreting what we call death in terms of life. Man is as immortal as the moner. Before the life of the child commenced it was part of its parents, and its existence now is nothing biologically but an outgrowth and a continuation of

Death, too, is a Process, not an Event.

their lives. What difference whether it be the entire organism that is perpetuated by self-division, as in the case of the moner, or certain selected life-bearing cells, as in man? An organism is nothing but a centre or focus through which the world-energy operates. The body of a man as well as of a moner undergoes complete change of its constituent elements repeatedly during its lifetime. What matter, then, that the somatic portion is lost in what we call death, if the function goes on in terms of more subtle forms of energic activity?

The only future that is possible in any case is an immortality of function. The individual is merely an aggregate of reactions to stimulus, the relatively persistent realization of a certain type of activity. What is this "persistent realization"? Not a persistence of the elements of the tissues or cells, but the persistence of a function, of a form or mode of behavior. A boy loses the blade of his jack-knife and puts in a new one. He then loses the handle and gets a new handle. Still he speaks of it as the same knife. He grows up to be a man, yet in a sense he is the same person he was when a boy. The self is the identity of function, and it is this which is immortal.

Function only is Immortal.

What difference does it make whether in what we call life I lose a single superficial cell of the epidermis rubbed off by attrition with the environment, or in the lifelong period of growth which, as we have seen, is at the same time the descent to death, I lose all these somatic cells, if meanwhile I have perpetuated this form of life into other modes of being?

There is Reason to believe that Selfhood as a Functional Identity

The problem resolves, then, into the question of evidence for the perpetuation of our present types of selfhood into other forms of activity which survive the so-called death of the body. In the first place, it is not proven that the redistribution of energy which takes place during the lifelong dying of an organism is necessarily degradation to a lower plane. There is every reason to believe that it is transformation to a higher level. The assumption of the older science, that the most complex organizations are the most unstable and therefore transient, is probably just the reverse of the truth. The more complex an organization, the wider the range of its relations, and therefore the less dependent is it upon any single relation for its continued existence. The strongest argument for future existence is present existence.

If, as the intra-atomic physics has shown us, there are more subtle modes of energy pervading nature than those that have been measured by the relatively crude methods of science,—modes of energy whose forces drift unhindered through the opaque objects of our visible world on their errands of cosmic redistribution and integration,—is it not probable that to these imponderable energies are to be attributed the heretofore incommensurable activities of life and mind? If this is so, the apparently insuperable obstacle which science hitherto has opposed to a belief in immortality is removed — the seeming destruction at death of that form or mode of organic function which we have regarded as constituting the personality of the individual. If, as we have seen, life and death are processes and not terminal events, if physical death, like mental birth, covers the entire period of what is commonly called life, is it not rational to regard this lifelong drama of destruction as really but the obverse side of a constructive synthesis of personality, whose pattern may be made out only in that world of intangible and invisible forces which science is just beginning to glimpse in the flouroscope?

Survives what is called Bodily Death.

Reverting to Professor Herriek's illustration,

suppose the vortex were to rise into the air. It vanishes from sight. It still retains its individuality as a vortex, even though we no longer see the whirling particles of dust. Similarly in the case of the organism. Because in death the equilibrium of forces which gave individuality to the bones and muscles and nerves has vanished into the more rarefied atmosphere of nature's invisible and intangible forces, leaving behind its fugitive freight of decaying protoplasm, is no reason for supposing that the form of activity is not still building for itself such an individuality as its intrinsic nature and the environing medium may determine.

Illustration of the Vortex of Dust.

CHAPTER III

CONSCIOUSNESS

EXPERIENCE we have seen is fundamentally social in character, undergoing transformation, as occasion requires, in finite centres of individual consciousness. We turn now to a consideration of the laws by which this transformation takes place. In a general way we have seen how experience is regarded from the functional standpoint. It is viewed primarily as a process. This is simply carrying over into psychology the dynamic principle common to all sciences at the present time. By process is meant activity, without specifying whether it is physical or psychical. The most fundamental statement that we can make about experience or reality is that it is action. The psychophysical organism is the complex transforming mechanism by which this activity is converted from one mode into another, to meet the needs of the complicated social life of the individual.

Experience and Consciousness.

§ 8. THE PSYCHOPHYSICAL ORGANISM

It is clear that, among other things, I am what is called a living being, an organism. What is

meant by this statement? Kant defines an organism as any whole whose parts are related reciprocally as means and ends. If this is a true conception, then the distinction which is ordinarily made between organism and environment, however useful for certain practical purposes, is arbitrary and inaccurate from a scientific point of view. We often speak as if there were first an organism and an environment, and then some adjustment of the one to the other. But of course this is not the case. This distinction is set up within the vital activity when for some reason the adjustment fails to be smoothly realized. As long as there is relative adaptation, organism and environment form a continuous series. It is only for purposes of convenience that the cow is distinguished from the pasture. From the point of view of precise science they represent an unbroken series of chemical and physical transformations of energy. The time was when the lichen was not distinguished from the bark of the tree on which it was found: now the lichen is called a plant-organism, and the bark, in relation to it, a part of its environment. Do the air one breathes and the food one eats belong to the organism or to the environment? Where does the stimulus cease and the response begin?

Organism and Environment.

If, as is assumed by current science, that portion of the outside universe is mechanical which in relation to the organism is called environment, it follows that the organism which is continuous with it is likewise mechanical. This is the argument of the mechanistic biologist. The organism is a machine because the material and energies which enter into its constitution form a continuum with the forces of the rest of the universe. It is true they form a synthesis in the organism which in degree of complexity and adjustability is different from that found in the so-called unorganized part of nature. This is expressed by saying that the organism has life and consciousness. But these are not additional forces. They are simply names for the operation of natural forces under certain conditions. The body is a living machine, a mechanism for doing mental work. None the less it is a machine: an unusually complicated and finely adjusted machine for thinking thoughts and evolving ideals as well as for building cities and fashioning implements of industry and war.

The Living Machine.

The essential idea embodied in the conception of an organism is a certain kind of behavior or system of activities. Wherever we

observe this kind of activity, we call it organic.

Life. The common way of stating this is to say that vital processes are circular or spiral, while purely inorganic processes are rectilinear or longitudinal; that organic processes are self-reinstating, while inorganic are irreversibly serial. Contrast a pebble with a bean. The pebble in the bed of the stream is being rounded by the continual wearing away of its surface. The bean, under two inches of soil, is undergoing a series of remarkable transformations which eventuate in the production of more beans. This kind of change is called life or growth.

But a still more profound difference is said to exist between the inorganic and the organic realms. An organism, unlike a stone, is capable of consciousness. At least this is true of the higher types of organism possessing a nervous system. But we must beware of the common fallacy of connecting consciousness exclusively with its central switch-board apparatus. Consciousness is no more confined to the nervous system than electrical phenomena are confined to the commutators by which the current is deflected. Consciousness is related to the activities of the entire organism. More than

Consciousness.

that: it is connected indirectly with the movements of the remotest atom in space. What we call the single organism is merely a centre of interchange through which the universal energies surge to and fro. The laws that hold the stars in their places are the laws that enable me to stand upon my feet. At each step, on the one hand, I resist a world with the pressure of the foot, while, on the other hand, the spring in my step is just the great universe giving me a push. If one could stand on a distant planet and watch our globe revolve, he would see a rhythm of life awakening to consciousness as the light of dawn swept around the sphere we call our earth. As the attraction of the moon causes a tidal wave to follow it in the plastic materials of the earth's crust, so the rays of the sun's light and heat quicken the sleeping rim of life which envelops our lithosphere, and an advancing wave of consciousness follows in its wake.

In the explanation of mind, as of life, we are obliged to go beyond the nervous system, and beyond the organism, in order to relate these to the cosmic energies which are the source of all. The nervous system is simply a mechanism for converting one kind

The Nervous System

of energy into another. Professor Loeb has shown that it is not essential to sensorimotor response, its function being chiefly one of acceleration. Excision of the single ganglion which constitutes the nervous system of an Ascidian does not prevent the customary reactions of this animal: it simply interferes with the rapidity of the coördinations. The nervous structures are merely protoplasmic bridges which serve as special conduction pathways between the sensory and motor organs, for the more expeditious and therefore more efficient coördination of the various parts of the organism in the process of adaptation to the environment. The brain is only an exceedingly complex and closely compacted organization of such conduction pathways. The real units of neural activity are functional systems of nerve-cells. When we speak of "brain-centres" we mean certain areas in which these elements are more closely crowded together, with more elaborate connections, than in other regions. The nervous system sustains somewhat the same relation to the rest of the body that the central switch-board bears to a system of electric lights and motors.

How these nerve-elements came to have this intermediary function is found in the fact that

the nervous system arose from certain ectoderm cells which originally occupied a position on the periphery of the organism, thus standing between its vital processes and the external world. The outside of the organism had to be sensitive either all over or in spots. In the more complex animals the cells in certain areas became more sensitive than the rest of the periphery. As these cells multiplied and became specialized in function, in the course of the complicated processes of growth, some of them were folded into the interior of the body to become ganglia and nerve-fibres, leaving others on the exterior to perform the original function of sensitivity. The brain represents the chief group of these infolded cells. The sense-organs represent those which were left on the surface of the body. The growing centralization of the nervous system, as we pass up the animal scale, has resulted in the subordination of the so-called lower centres to a central group of ganglia located in the head. This group of ganglia we call the brain. The nervous system is thus a limited monarchy rather than a republic, with the brain as sovereign.

Is an Equating Apparatus.

The reason is plain, therefore, for the common belief that the brain is the "seat" of conscious-

ness. It is the chief centre through which pass the nerve-currents which carry the afferent and efferent impulses. But this must not be taken to mean that consciousness is located in some particular part of the brain, such as the cortex. Consciousness is our name for designating a certain kind of adjustment which takes place between two portions of the universe, and the organism, the brain, the cortex, represents the centre of transformation of the energies involved in the adjustment. But when I gaze upon the stars at night, it is just as true, if I am going to use space-terms at all in this connection, that my consciousness reaches out into the stellar depths to embrace those points of light, as that it is located in the occipital part of my head. Just as true, and also just as false; for the question may be raised whether this attempt to locate consciousness is not as irrelevant as it would be to restrict life to the stomach, or electricity or magnetism to the dynamo.

The "Seat" of Consciousness.

What I am can never be understood from a study of my organism alone, for the reason that this is but a small part of the reality of my being. If my existence is bound up with the rest of the dynamic system which I call the universe,

this organism must be studied in its relations to the whole of which it is a part. If you start from my organism as an isolated fact, you can never explain how I come to experience a world of external things; while, starting from a world of external things, it is equally impossible to understand how these become imprinted on my mind. The presence of the brain is essential to consciousness because it is necessary to maintain the organic circuit of stimulus and response. It is the special equating mechanism for conscious acts. But it is part only of a larger system in which it plays the rôle of an intermediary.

The organic circuit is any simple or complex coördination involving a reciprocal relation of stimulus and response. The unit of experience is the act. All feelings, thoughts, words, movements, cluster about certain coördinations as pivots or centres. Experiences go in groups. All that one *feels* and *thinks* is organized about something that one has done or is about to *do*. Experience is a system of acts within acts, or circuits within circuits, the relative independence of any given act or circuit depending on the interests or practical necessities of the moment. It may be a short circuit or a long circuit. Short circuits are unconscious,

The Organic Circuit.

as in reflex, instinctive, and habitual action. Long circuits are conscious and, in the higher animals, always involve the cortex. When the coördination involves the relation of the organism as a whole to the outside environment, it is called adaptation. When it involves the relationship of one part of the organism to another, such as the coördination of sense-organs and muscles, it is called adjustment.

Stimulus and Response.

The processes of adaptation and adjustment involve the reciprocal interaction of stimulus and response. Stimulation is not, as is often supposed, the merely passive reception of impulses from without: it involves a selective process on the part of the sense organs. A mere shock may be an excitant, but it is not properly called a stimulus, which is always of such a nature as to call out a definite reaction. This factor of the active selection of the stimulus is seen in the accommodation of the optical apparatus in looking, in the turning of the head and tension of the ear-muscles in listening, sniffing when we smell, smacking when we taste, and in the active exploring movements of the fingers in touch. Likewise the response is not a mere random movement: it is determined with reference to the stimulus. If the organism

is active in the selection of the stimulus, it is equally true that, with reference to the setting up of a response, it is passive to the leadings of the stimulus. Stimulus and response, in other words, have existence only within the organic circuit or coördination. This may involve adaptation to an environment outside or adjustment within the organism itself, but in either case these two functions of stimulating and responding fall within the life-process; they do not mean the active response of a living organism to an external stimulus which is inert and dead. All experience is sensory in one aspect and motor in another aspect, according as the emphasis is placed upon one or other of these phases.

The tactile-kinæsthetic sensations furnish the fundamental imagery of meaning because they are genetically prior and functionally most important in maintaining and perpetuating the life-process. All other types of imagery are translated into terms of touch and movement. This is the sensational basis of pragmatism. We learn by doing; practice makes perfect, conduct is the test of the truth of ideas; and conduct comes to consciousness primarily in terms of the tactile-kinæsthetic sense. All sensations and images are ideomotor.

The Fundamental Imagery of Meaning.

The only difference between the tactile-kinæsthetic and the other forms of imagery is in the directness with which they lead to action. The tactile and kinæsthetic images arise out of and lead directly to movement of some sort. Auditory, visual, olfactory, and gustatory forms of imagery must first be translated into these terms. With the advance of civilization and culture the tactile and kinæsthetic seem to have been brought into subservience to the visual and auditory imagery, largely because of the predominance of verbal symbols; but this is only apparent, since it requires only a little introspective analysis to disclose the motor-cues operating perhaps all the more effectively because subconsciously beneath the threshold. Where this subordination has not taken place, as in the instance of Helen Keller, the tactile-kinæsthetic imagery retains its original function, and becomes not only the fundamental, but the only imagery of meaning in a way that is not conceivable in the case of the visual and auditory alone.

The special function of the brain in the organic circuit is to adapt the organism to comparatively irregular variations in the stimulus. Tropisms, reflexes, and instincts provide for

response to definite and invariable stimuli, but the brain and consciousness are necessary to provide for adjustment to a variable stimulus. When, therefore, we say that consciousness is a functioning of the brain, this need not be understood in a materialistic sense. The neurologist says that thought is a function of the cortex in the same sense that the student of physics says that it is the function of the electric motor to generate power. The physicist does not mean that this piece of material apparatus produces another material thing called power. As a man of science he holds that there is no more matter in the universe after the current is started through the coil of the instrument than there was before: there is simply a redistribution of energy. The readjustment involves changes in the environment, and this obvious effect, by a figure of speech, is attributed to power in the motor, or we speak of this effect as generated by the motor.

The Special Function of the Brain.

The neurologist does not mean that consciousness is something new produced or generated by the nervous system. Consciousness is the name for a certain readjustment or redistribution of energy focused in the organism, just as Power is the physicist's name

This is not Materialism.

for an analogous readjustment in the case of the motor. When the physiologist speaks of digestion as the function of the stomach, or of the secretion of bile as the function of the liver, he does not mean that the stomach produces anything new, that the liver creates bile out of nothing. These are processes of transformation merely. An adequate science of digestion implies the study of foods as well as of the alimentary canal. Digestion is our term for describing the process of interaction which takes place when these two realities (food and stomach) come together. We do not accuse a scientist of materialism because he explains digestion in terms of the chemistry of foods and the mechanics of alimentation. We do not feel obliged to call in some special "vital force" to explain it. Why should we in explaining the operation of the brain or nervous system?

The "soul" represents simply the last stand which a doctrine of occult forces is making in the case of the youngest of the experimental sciences. Consciousness is neither a cause nor an effect of the brain. It is simply the tensional activity or readjustment process which takes place in the universe at one point or another in what are called organ-

But Energism.

isms, wherever cosmic energies are brought into interaction in certain definite ways. Pass an electric current through a straight wire and it pursues a rectilinear or progressional path. Wind the wire into a coil and approximate the two ends, and this energy is transformed into a cyclical or rotational motion which gives the coil individuality as a magnet. An organism, a brain, a consciousness, a personality, has the same sort of individuality that we find in a solenoid or in a gyroscope—it is a relatively independent system of internally balanced vector activities having a maximum of adjustability of its various parts in relation to each other and of adaptability as a whole to the surrounding conditions of the environment.

§ 9. THE LAW OF CONSCIOUSNESS

Tension the Condition of Consciousness.

Tension is the condition of consciousness. By this is meant that consciousness appears only when the process of action is relatively impeded or interrupted. Activity is going on all the time in tropism, reflex, instinct, and habit. But these become consciously performed when there arises relative stress or conflict in adjustment. Experience is a continuous dynamic stream of activity with

moments of check and reinforcement, alternate resistances and controls. Consciousness supervenes at the break in the circuit, at the point of disadaptation or maladjustment, where old instincts or habits are being broken down and new ones are being built up. Consciousness thus is the growing-point of experience. It is the new thing in nature. It follows the shifting area of transformation as it gyrates from point to point striving to meet the needs of the organism.

A certain amount of resistance or tension seems to be necessary for the running of any machine. If there were absolutely no friction an engine would stop. The ball-bearings of a bicycle are not designed to eliminate friction: they simply reduce it at points where it would be a hindrance. So it is with that intricate psychophysical machine which we call the human body. Because of the smooth working of its parts and the relative infrequency of any serious mal-coördination, we are prone to forget it, but the physician will readily point out, not only the abnormal and injurious frictions which arise in disease, but the normal resistances which are necessary to the healthy functioning of the organism. Consciousness is conditioned on con-

tinual change in the stimulus. One does not notice a well-fitting garment at all, but if it fails to fit or is different from what one is accustomed to wear, he feels it at once. Action is unconscious when smooth and unimpeded. Only when interrupted or checked does it become conscious.

Let us suppose that I am trying to write a letter on the arm of my chair. I am actively pushing the pencil over the paper when suddenly the point breaks. Up to this time my experience, relatively speaking, has been unified. It has been a unity so far as pencil, paper, chair, and pen-knife are concerned. These, with myriad other things, have been lost in the total situation of letter-writing. The only tension has been that involved in keeping up the train of ideas which was finding expression in the act of writing. With reference to everything else the situation has been an immediate totality. But now, when the pencil catches in a crack in the chair and the point breaks, the train of ideas recedes into the margin and the pencil-chair situation emerges. Pencil, chair, pen-knife, table, jut out into consciousness because of difficulty encountered in the writing-process. It is because of the tension

Illustration: Writing a Letter.

between pencil and chair and the demand for a knife to sharpen the pencil and the desire for a table to write on, that these things suddenly come into the focus of attention. One thing comes to be consciously set over against another thing only when there has been relative failure in coördinating them.

Illustration: Communication by Speech.

As another example take the process of communication by speech. In so far as I am adequately interpreting the meaning you intend to convey by your words, or effectively expressing my meaning to you by my words, the process of communication itself is not explicit. It is still merged in the immediacy of the act. But if for any reason speech falters, if I fail to get your meaning or to express mine so that you understand it, then the meaning of the words themselves comes into question and discussion arises. The language itself becomes the subject of conscious analysis and criticism, until we come to some mutual understanding of our common meaning. This polarizing process, in which one thing comes into conscious antagonism and interaction with another thing, is incident to the attempted reconstruction of the situation into a more adequate form. Experience undergoing such re-

construction from within is conscious. In the more fluent and unimpeded phase it tends to become unconscious.

Psychophysics illustrates this law of tension, in its determination of thresholds, the summation of stimuli, and the lag of sensation behind stimulus. It requires a greater degree of intensity of stimulus to produce consciousness in some cases than in others. This is expressed by the Weber-Fechner law, which defines for different sense-spheres the relative amount of stimulus requisite to produce a noticeable difference in sensation. The lag of sensation represents the neural inertia of the different sense-organs due to the inhibitory effect of competing stimuli. The duration, extensity, and intensity of stimulation requisite to produce a given sensational effect depends upon the degree in which the organs involved are already preoccupied or set in other directions by rival coördinations. The study of sensation in experimental psychology is largely a technical investigation of the nature and limits of this tension, while the study of the reaction-times of different sensorimotor mechanisms indicates the corresponding facilitation or habituation of such stimuli. Genetic and comparative

Psychological Statement of the Law.

psychology, on the other hand, trace the types of such tension-systems through the different stages of development, and compare them in different individuals and species of animal life.

Consciousness thus is coming to be stated dynamically as a mode of activity, instead of being regarded as a mysterious occult accompaniment of brain-process or as the manifestation of some spiritual substance called the soul. All consciousness, in this sense, is motor. Feeling and thought are types of transformation of energy, modes of adaptation and adjustment. A feeling or a thought is an incipient movement. An image is a nascent act — a motor-cue. This is the key to the problem of psychogenesis which has so baffled the comparative psychologist. Consciousness is to be regarded as a kind of behavior which may be treated objectively like any other phenomenon in nature. The only difference lies in the complexity of the dynamic interactions involved. As the end or purpose of an act becomes more remote from the means for achieving it, the motor cues become swamped in the idea of the end. As the functions of the ear and the eye arise, the more primitive tactile and kinæsthetic images no longer stand out distinctly as mo-

The Key to Psychogenesis.

tor-cues (which still they are), but are vaguely included in the auditory and visual idea of the end. The problem of the evolution of consciousness is therefore the problem of unraveling the strands by which the original ideomotor action has been complicated by successive graftings upon it of similar motor-cues, until the relation to the originally active phase of coördination is lost in the preponderance of the derivative imagery.

We have said that consciousness occurs wherever there is tension in the coördination. This does not signify that there is consciousness wherever there is friction of any sort or degree. The fact that for an outside observer there is action and reaction of forces is no proof of the presence of consciousness. It must be tension relative to the existing or preceding state of equilibrium in the given dynamic system. It must be conflict from the point of view of the situation which contains the opposed factors. A stimulus which is perceptible under one set of conditions may not be perceptible in another setting. A word spoken by a friend at my side, if uttered in the privacy of my room, will call forth a response from me when it will not on the noisy street or amid the roar of a

Relativity of the Law.

subway express. Why there ever should be resistance or obstruction in action is an ultimate question here as much and as little as in physics. The Hegelian doubtless would say that pure spontaneity posits resistance as its own other. The evolutionist attributes it to the environment. But that no more accounts for the presence of this element of opposition which bifurcates experience in consciousness, than it accounts for the principle of variation in evolution or for the chemical affinities and electrical polarities in physical science.

The Evolution of Consciousness.

Consciousness is present at the initiation of new modes of activity on the part of the organism, since in such cases there is a relative disturbance of the vital equilibrium and a conflict of competing impulses. In the lowest organisms the conditions of tension would, of course, be very simple and the range of alternative modes of response exceedingly limited — the consciousness is correspondingly vague. Contrast the problems which present themselves to an amœba and to a mammal. The environment of the former is relatively homogeneous; that of the latter is constantly shifting, not alone by changes inherent in the environment, but also by reason of the

voluntary movements of the animal itself. Or contrast the hunger of an oyster with that of a man, and the simplicity of the means employed to satisfy this craving in the one case with the complexity of the means used in the other. A thousand complicated economic and social instrumentalities unite to spread the feast to which the civilized man sits down at every meal, while the hunger of the bivalve must for the most part await the food that chance throws in its way.

Primitive Consciousness.

By the primitive consciousness, things, objects, situations are taken in their totality. It is only in the highly developed animal that one thing comes to stand clearly for another, or that memory-images and constructive ideals split apart the inchoate present into a definite past and an indeterminate future. It is because of this lack of the conditions of complication that man has been loath to credit the lower animal with consciousness. But while it may not be there in the determinate form in which we experience it in ourselves, is there any reason to deny that it is vaguely present when the conditions of tensional reorganization do exist? We must not fall into the historical fallacy of reading back human traits

into the animal consciousness. But there is a counter danger, on the other hand, that in the attempt to avoid anthropomorphizing them we fail to give the lower animals their due. The consciousness of an oyster cannot be interpreted in terms of our individualistic selfhood, because the conditions of social tension are not present to develop the consciousness of self; but there is no reason, when the conditions are present, why consciousness may not come sporadically in vague flashes of feeling in connection with the crises and emergencies of the struggle for life.

The Criterion of Consciousness.

The chief criticism to be made upon the results of the recent experimental school of comparative psychologists is that the artificial conditions of the experiments interfere with the natural proclivities of the animals experimented upon. The experiments do not approximate the conditions to which the animals are accustomed in the state of nature. Hence the negative conclusions in relation to their possessing consciousness and intelligence are unreliable. An animal may be expected to exhibit what intelligence it possesses only when the problem to be solved lies along the line of its inherent abilities. Purposefulness

is not an adequate criterion, since we find evidence of adaptation of means to ends throughout nature: all nature is purpose*ful* but not all natural processes are consciously purpos*ive*. The ability to learn by experience, to vary the use of means in the attainment of an end, is the only satisfactory criterion, and this can be applied only in relation to the demands being made upon the organism in the given situation.

§ 10. THE LAW OF FACILITATION

The Tendency toward Equilibrium.

Consciousness arises in conflict, but tends constantly toward the restoration of the organic equilibrium. It points to something beyond itself, to the new coördination, to a more adequate experience. The relatively tensional phase of conscious action is perfectly continuous with the relatively stable unconscious phases. There is no infringement of the law of conservation and interconvertibility of energy. We simply have one name, "consciousness," for describing action when it is relatively tensional, and another, "habit," for describing it when it is in relative equilibrium. This conception is divested of all objections from the metaphysical side if it is borne in mind that consciousness is no more an

entity than habit, that like habit it represents the life of the organism under a given set of conditions. Sleep is a relatively stable equilibrium lasting for hours. Moments of absent-mindedness or motor-automatism exhibit a transitory and local equilibrium of briefer duration. Consciousness represents this equilibrium disturbed and seeking to reëstablish itself on a fresh basis which will harmonize the conflicting factors. Thus experience presents the phenomenon of previously unconscious activities coming into the focus of attention, and, under certain conditions, passing out again through successive stages of marginal consciousness until they become unconscious again as habits.

The Conscious and the Unconscious.

In order to understand conscious experience it must be viewed in the light of its relations to that mysterious background which is called the unconscious or subconscious or subliminal self. Experience is all that one is and does, and one is and does many things of which he is not immediately aware. Deep-rooted instincts and impulses grip us from below, and against our will at times hurry us along to acts of which we repent at leisure. Habits we are conscious of having ourselves built up bind us in a slavery from which

we vainly try to escape. How are we to explain these spectres which lurk in the background and hold us in their thrall? How, in other words, is our conscious related to our unconscious experience? The answer in a word is this: the conscious develops within the unconscious; consciousness develops within and for the sake of action.

On the one side we have the law of tension: conflict between means and ends in consciousness. Tension, of course, implies interaction. The two phases are not simply opposed: in order to be held apart they must be brought into relation. An absolute tension would result in separation, and consciousness would vanish with the complete dissociation of the two aspects. The consciousness of this moment remains such only by virtue of the fact that the two aspects, while they are in tension, at the same time, and indeed just because they are so, are also in a relation of mutual reinforcement. On the other side, we have the law of facilitation. The unconscious act is one which has been mechanized by frequent repetition of a conscious coördination. The law of facilitation is the law of habit by which a previously conscious act is rendered automatic.

Tension and Facilitation.

The phenomena of dissociation and automa-

tism in abnormal psychology afford striking examples of the laws of tension and facilitation in their reciprocal relations. Dissociation of mental states, as illustrated in the split-off consciousness and in dual or multiple personality, shows the effects of extreme operation of the law of tension, while obsessions, fixed ideas, and certain kinds of automatism exhibit pathological examples of the law of facilitation. Extreme tension, in fact, is the condition by which certain coördinations become dissociated from the rest of the psychophysical system and thus permanently side-tracked in the form of uncontrollable automatisms, while it is this disorganization of the coördinations which is the chief evidence relied upon for pronouncing the associative processes abnormal. Consciousness and habit represent, therefore, two opposed principles in our experience, the one tending to pull it to pieces and analyze it, the other to unify and integrate it. Habit everywhere means organized experience. Consciousness everywhere is the sign of incomplete organization. This does not mean that complete automatism is the ideal state, for that would mean a fixed, finished completedness, which is contrary to our modern idea of perfection. The

Dissociation and Automatism.

ideal, rather, is a state of perpetual reorganization in which the very sense of incompleteness implies an advancing standard of perfection. Perfection means perfecting.

But why, it may be asked, do we speak of "conscious" experience? Does not this imply that there is an experience which is unconscious? And how can we speak of experiencing that of which we are unconscious? This is the same difficulty we encountered in endeavoring to describe the reality which lies beyond our knowledge. As we are compelled to describe the unknown in terms of knowledge, so here we seem obliged to state the unconscious in terms of consciousness. Taken in an absolute sense, the *un*conscious would seem to be as purely negative in significance as the *in*finite and the *im*material.

Unconscious Experience.

Various devices have been invented to escape this apparent dilemma. The relation of the conscious to the unconscious is commonly expressed by the figure of a limen or threshold, or by a wave on the surface of the sea. All that lies above a certain line is conscious, all below this line is unconscious. But this, at any given time, seems to relegate a part of experience to the realm of the unknowable, and is open to

the objections mentioned in the preceding paragraph. Similar objections may be raised if consciousness is conceived under the figure of a limited focal area within a larger field, in which the unconscious is represented by the fringe or successive marginal areas. And these objections, though to a less degree, apply to the figure in which experience is likened to a stream in which consciousness appears as frothing into foam where the water breaks upon a boulder in its course. These conceptions are all misleading, because by the very metaphors used it is assumed that the conscious and the unconscious are different contents, which is just the point at issue.

The relation is a more dynamic one. The conscious and the unconscious represent different functions within the process of experience, different ways in which the movement proceeds, and consequently exist only in relation to each other. Experience may be conceived as a complex dynamic system, and consciousness as a more emphatic phase or locus within this system. Or, better still, we may say that the so-called unconscious is a name for describing organized consciousness, capitalized or funded experience — the positive equipment of

Funded Experience.

instincts and habits by which consciousness performs its function of mediating further experience. The unconscious is the available machinery of experience by which it evolves itself to higher levels. The unconscious is related to conscious experience somewhat as the energy of inertia in physics is related to the energy of motion: it is potential as contrasted with kinetic energy.

§ 11. HABIT AND ATTENTION

It is obvious from what has been said that experience is at once unitary and diverse. In a dynamic system there is no such thing as simple unity or mere multiplicity. An absolutely single and simple unity could have no diversity within it, and there could be nothing beyond, for in either case this would mean relation, and that would destroy the distinctionless simplicity. On the other hand, an absolute multiplicity or plurality is self-contradictory, because, in order to be plural, the various elements must exist together and this introduces relation and therefore a certain unity. Experience is a diversity in unity, an identity in the midst of difference.

The Unity and the Diversity of Experience.

What makes experience one? A boy strikes a match and touches it to a rocket. It hisses,

spurts, and plunges up into the air, leaving a trail of sparks behind. It bursts into a shower of stars and finally sinks away, its last sign a wooden stick dropping inertly to the ground. What makes this "one" experience to the boy? The answer is found in the unity of the act or organic circuit which underlies it. An experience is unified if it follows the line of easy and familiar adjustment, if it exploits a habit. Those things tend to go together which have gone together in the past.

The Continuity in Experience.

What makes experiences many? What leads us to distinguish one experience from another? What determines the breaking up of experience into experiences? The transition from one act to another act, from one organic circuit or situation to another, is the answer. When an experience ceases to satisfy, or the coördination ceases to adapt, a distinction appears. Suppose a lecture in process. This is a comparatively unified experience. Suddenly some one rushes into the room crying, "Fire!" Immediately a new situation, a new circuit, arises, and a new coördination calling out a new act. There is a break in the experience and a new conscious reconstruction is initiated, which con-

The Transitions of Experience.

tinues until a reunification takes place on a different level. This process of transition, with its accompanying phenomena, is called attention. If habit is likened to a circle with a single centre, attention may be likened to the tangential tendencies which would pull the circle out into an ellipse with its rival foci.

Attention and habit are the psychological counterparts of tension and facilitation. Habit is the stable, attention the variant element in experience. Habit is conservative, attention is progressive. Habit is the result of the facilitation of a coördination; attention always means tension. It is the psychological counterpart of organic disadaptation and maladjustment. It is the sign of difficulty and effort in the coördination, as habit expresses the ease and familiarity of response. Both habit and attention may ultimately be traced back to modes of motor-control. The instinct of lying in wait, holding one's self in readiness to seize prey or for flight, is its primitive form. The wild beast stalking its victim, the Indian on the trail, the child absorbed in its play, the expressions of a person in perplexity or engaged in study, — the knit eyebrows, the fixed gaze, the tense attitude, the suspended

Habit means the Facilitation of a Coördination.

respiration, — these illustrate the coöperation of habit and attention in the control of experience.

Habits are presupposed in all attention. Otherwise with what would we attend? Attention is simply the tension between conflicting habit-systems and represents the effort of these struggling tendencies to reach a working equilibrium. If our habits prove inadequate to meet the exigencies of a situation, we make them over, as we say, by directing the attention to them, so as to modify them into more adequate forms. But, on the other hand, this very act of attending is a redirecting of those very habits along new lines and in different directions. The old habits persist in the new functions, in a modified form. The problem of the controlled reconstruction of experience, therefore, means the acquirement of relevant habits of attention. Control of attention is a matter of habit, while reliable habit depends upon flexibility of attention. The best habit is not the fixed and rigid type of reaction, but one which is adaptable to the conditions of an evolving experience. Thus we see that while, on the one hand, attention is born in the conflict of opposing habits, habits, on the other

Attention means Tension in a Co-ordination.

hand, arise out of this very process of attention when it becomes rhythmic and uniform. Habit is funded experience. Attention is evolving consciousness.

So far we have been speaking of the positive aspect of the processes of adaptation and adjustment. But every act of attending means that other acts are inhibited. The selection of one coördination implies the rejection of others. Concentration of attention at one point means withdrawal from other points. This, however, does not necessitate the exclusion or destruction of the inhibited activities, but their subordination to the main line of adjustment. They contribute to, instead of opposing, the intended act. The singer inhibits the spasmodic convulsions of the diaphragm due to nervousness, but only to utilize that very muscle and that same energy for the production of a pure and sustained tone. The importance of inhibition appears in the ability to attend to that only which at the time demands attention, leaving unimportant details aside. The mark of control in experience is the ability to seize upon the salient features of a situation and not be led into blind alleys by irrelevant issues. This is the end of all education and culture — the

Inhibition.

increase of central control over unorganized peripheral responses.

Here, too, appears the relation of attention to sensation. Sensation is the name for a definite and localized act of attention. That "catches our attention" which is relevant to some need or want. I do not attend to things in general, but to this or that object. I see a hat or smell a rose or hear a whistle or taste an orange or touch the candle flame. This attentional process takes place through the accommodation of the muscles which control the sense-organs. Wholly suppress these sensorimotor coördinations and you suppress attention. As Maudsley said, he who is incapable of controlling his muscles is incapable of attention. We attend only to objects which have some interest for us or which are related in some way to the demands of the organism. The object need not please us. The man who stared the lion out of countenance had no love for the lion, but his interest and attention were acute. It is not true that we can attend to anything we please, for attention is the slave of interest and interest roots in the instinctive life of the feelings which are largely beyond our control. But attention may become voluntary

Attention and Sensation.

and deliberate, and is then called volition. When, as we say, we know what we are going to do, we call attention will-power, and its outcome an act of choice. Volition is thought and feeling going over into action. It is attention under circumstances in which we identify ourselves so unmistakably with the act, that it seems to result wholly from our own initiative.

Attention and Volition.

CHAPTER IV

FEELING

§ 12. DOING, FEELING, AND THINKING

PROFESSOR THORNDIKE has remarked that we ought to turn our views of human psychology upside down, and study what is now casually referred to in a chapter on habit or on the development of the will, as the general psychological law of which the commonly named processes are derivatives. Psychology is the science of doing, feeling, and thinking, in this order of importance rather than the reverse. Feeling and thinking are grounded in action. The relation to these of what is called will has been the subject of much controversy. According to the tripartite view, intellect, feeling, and will are coördinate and equally fundamental phases of consciousness. No one is reducible to either of the others. According to the bipartite theory, there are only two irreducible types of conscious experience — feeling and sensation, what is called will being simply a complex of affective and

Experience as Action.

sensational elements. A careful analysis of the facts seems to favor the latter view.

Two uses of the term "will" must be clearly distinguished: a narrower use in which it is equivalent to volition or conscious choice, and a wider one in which will is synonymous with activity or the process of experience in general. When used in the broader signification, both the tripartite and bipartite theories are in a sense true, while in the narrower use of the term the phenomena of will are simply restated in different terms. As Professor Angell has said, to say that there is no such thing as will is simply the psychologist's way of saying that there is nothing but will. Instead of the traditional formula, I know somewhat, feel somehow, do something, as though these were distinct processes, one should say I feel and know that I act thus and so. Feeling and thinking develop within and for the sake of doing. This makes will the basal thing, while yet it recognizes no motor-consciousness as such, distinct from feeling and cognition. The whole process of experience is dynamic and propulsive throughout, whether it takes the form of an overt act or of those more subtle activities called emotion and thought. For feeling and thinking

"Will."

are just as truly modes of action as is a movement. In fact they themselves are but incipient or inhibited acts. While not so gross or obvious as most muscular coördinations, feeling and thinking are just as truly sensorimotor coördinations as rowing a boat or playing a piano. The motor-organs involved are the finer systems of accessory muscles and hidden or remote changes in the internal organs, but they are none the less modes of action.

Feeling.

The phenomena of feeling are obscure, indefinite, variable, and uncertain, compared with those of cognition. For this reason they are peculiarly difficult to study introspectively. The very act of attempting to analyze them changes them into something else. Feeling has been called the dark continent of psychological exploration. But this much is clear: feeling is a fundamental mode of conscious activity related to cognition or thinking as the vague and undefined matrix within which the latter arises.

Feeling and Instinct.

The fundamental character of feeling is expressed by its two main forms, pain and pleasure, which indicate its significance for the progressive maintenance of the life and health of the psychophysical organism.

Feeling is a sort of mental thermometer or algedometer. It is directly connected with the functioning, or with the inhibition of the functioning, of those deep-seated conative tendencies of the organism called instincts and habits. These instincts have been inherited from our animal ancestors, in some instances with but slight modification, in other cases with large modifications by the grafting upon them of acquired reactions. There is usually a large increment of habits built up in the lifetime of the individual, which, in the case of man, give the peculiar or characteristic turn which the emotions take in the particular person.

Instinct and Impulse.

Emotions, in other words, are connected organically with the latent vestiges of originally useful acts. Fear, anger, shame, surprise, joy, grief, each has its characteristic emotional expression which is, for the most part, an involuntary and often unconscious change in both the hidden and overt activities of the organism. In general, instinctive action tends to be automatic, when it functions in a free and unimpeded manner. Feeling and emotion emerge when such function is obstructed or inhibited for any reason. Instinct then becomes impulse, which on the conscious side is

known as feeling. The emotional reaction is an impulsive reaction. It differs from instinct in being a vaguely total conscious response to the situation rather than a definitely accurate automatic response. For this reason emotion is the bearer of the value consciousness, which comes to us in terms of that vague background of unanalyzed and unlocalized organic and tactile-kinæsthetic sensations which, while inarticulate as knowledge, are of supreme importance in constituting that core of psychological identity known as the empirical ego.

Without going into a discussion of conflicting views of the nature and conditions of pleasure and pain, the theory will here be stated which seems to explain most of the facts. It was first formulated by the late Professor C. L. Herrick, who named it the "summation-irradiation" theory, from the two processes which are the fundamental conditions of feeling.

§ 13. PAIN AND PLEASURE

Aristotle long ago defined pleasure as the perfect energizing of sense by its appropriate object, and modern writers have only rephrased his doctrine when they relate it to organic activities lying between the extremes

Theories.

of excessive and deficient stimulation. Pleasure, it is affirmed, is connected with the anabolic, constructive, building-up process; pain, with the katabolic, destructive, tearing-down process. Thwarting a habit is painful. Exploiting a habit is pleasurable. Encountering resistance is pleasurable only if it results in the final triumph of a habit. Or, as Dr. Marshall puts it, pleasure and pain are determined by the relation between the energy expended and the energy received at any given moment by the physical organs which determine the content of the moment. That is, pleasure is experienced whenever a surplus of stored energy is discharged in the reaction to the stimulus; pain, whenever a stimulus claims a greater development of energy than the organ is capable of affording.

Reformulating these ideas, Professor Herrick's theory holds that the conditions of pleasurable feeling are irradiation (1) along lines of habitual response; (2) of stimuli whose summation and discharge fall within the limits of the normal functioning of the organ or organs involved. Such reactions as laughing, sneezing, tickling, itching, inflammation illustrate this twofold principle. So long as these processes fall well within the limits of

Summation and Irradiation.

normal habit, they are not painful, and may be positively pleasurable. But let the summation exceed these limits in the case of any one of them, and it becomes painful. Thus, one may laugh till he cries. Sneezing, which ordinarily is accompanied by a pleasant feeling of relief, may become painful. Tickling readily passes the limit of pleasure. Itching is pleasurable only when the stimulus is diffused as by rubbing or scratching the part. And the pleasurable glow of local hyperæmia soon passes over into the painful processes of pathological inflammation.

The mechanism of irradiation in the case of the higher pleasures, such as those of the æsthetic consciousness, is to be found in the elaborate habits of attention described in the psychology-books under the rubrics of association of ideas, apperceptive systems, psychical dispositions, etc. These intellectual habits all have a physiological basis, of course, differing from the recognized sense-habits only in the remoteness and subtlety of their operation. Professor Herrick finds the mechanism for irradiation, in the case of the higher emotions, in the associative centres of the cortex with their myriad paths and intricate meshwork of conduction-pathways, corresponding to the

The Mechanism of Irradiation.

complex ramification and the terminal arborization of the nerves in the erectile tissues of the body in the case of the more intense of the sense-pleasures. But doubtless it is inaccurate to connect the intellectual pleasures exclusively with the switch-board connections in the cortex; they, too, ultimately, involve vascular and other metabolic changes in the peripheral sensory and motor apparatus. Just what these peripheral changes are in the case of the higher emotions, it is difficult to specify with certainty, in the present state of our knowledge; but that the most abstract intellectual processes involve peripheral sensorimotor adjustments no physiologist now doubts. It is simply a question of detailed investigation which students of physiological psychology are bound in time to answer. Indeed, the problem is already beginning to be solved by the studies which are now being pursued into the phenomena of motor-control, voluntary attention, the physiological conditions of emotion, movement-sensations, and so-called imageless thought.

The emotions, then, are like the sympathetic vibrations of a musical instrument. If there is a conflict of vibrations, dissonance, pain, results. If there is reinforcement of the fundamental

(habit) by overtones, by connected systems (other habits), we have harmony or pleasure. Stimuli are experienced as pleasurable in proportion as they relieve existing strain or overcome resistance and give control, in each case the pleasure being due to the fact that relief and control represent the reorganization of the experience in terms of fundamental instincts and habits of the organism. Discharge, expression, irradiation of the energies, within certain limits of favorable stimulation, are pleasurable because they take place along the familiar and easy paths, the lines of least resistance, of habitual response. Stimuli are experienced as painful in proportion as they fail to relieve strain or to overcome resistance, i. e. when the summation of stimuli or inhibition of impulses reaches a point beyond the capacity of the irradiative controlling apparatus of habit to cope with it.

The Law of Emotion.

In other words, stated as a general principle, with the limitations just noted, it may be said that pain means congestion, contraction, obstruction, disadaptation, a "disproportionateness of stimulus to the conveying power of the organ." Pleasure means diffusion, expansion, irradiation, discharge. In both cases there is summation of stimuli, inhibition and conflict

of impulses, but in the case of pain this summation finds no overflow or the process of inhibition is carried to the point where the subsequent discharge results in a further maladjustment, because it exceeds the normal irradiative capacity of the habits involved.

Fear and grief are good illustrations of summation which becomes painful. The sudden transformations of wit and humor illustrate the principle of irradiation. When we seek to divert the attention of the hurt child, or take a trip to Europe to escape the torture of a consuming sorrow, we are unconsciously employing this principle: we seek a normal irradiation for the congested stimuli and impulses, by calling into play a different set of habits, a greater variety and range of apperceptive systems. Why is rest after hard work pleasant? Whence the glow of pleasure which accompanies the consciousness of success, even when one is fatigued? It comes from the fact that the energies which have been with effort directed along less accustomed lines are suddenly released into the more habitual channels of familiar and easy response. Pleasure is connected with moderate stimulation, with the normal functioning of organs. But it must be

Illustrations.

remembered that what is moderate and normal varies with different conditions. Tension is the condition of consciousness everywhere, but this tension is *relative* to the situation and to the needs of the organism.

§ 14. THE RELATIVITY DOCTRINE

There are two sets of facts in apparent opposition to this law of emotion, which must be considered if it is to become an accredited principle.

In the first place, there are all the facts of the relativity of pleasure and pain. What is painful to one person may be only agreeably stimulating to another, and the same is true for a given individual under different conditions of health, nervous irritability, and fatigue. In other words, summation or irradiation is painful or pleasurable only under certain conditions of intensity; it is relative to the existing state of tension or equilibrium in the organism. If pleasure meant merely ease of adjustment, habit should carry with it the greatest pleasure, and pain should be in direct ratio to difficulty of adjustment, neither of which is uniformly the case. Up to the limit of normal functioning only, does

The Relativity of Pleasure and Pain.

pleasure increase with summation and subsequent irradiation; beyond this point pain supervenes. What is the limit, in the particular case, is determined by all sorts of conditions, hereditary and environmental, permanent and transitory. So that while the general principle holds, that when summation and irradiation lie between certain limits of intensity normal to the individual organism it is pleasurable, yet these limits are a sliding scale even in the experience of that individual, and of course much more so in the comparison of different individuals. Within certain limits summation, inhibition, stimulation, tension, antagonism of impulses, serve only to heighten and enhance the pleasure; and conversely, beyond certain limits irradiation, discharge, diffusion of response, expression of impulses, tend to weaken the pleasurable emotion.

This relativity doctrine perhaps explains why it is that we seem able to actually take pleasure in certain painful experiences, such as the emotions of pity and fear, in tragedy, and what has been called "the enjoyment of pain." All excitement, up to a certain point, tends to be pleasurable. Hirn, in his "Origins of Art," speaks of the stimulating effect of acute

The Tonic of Pain.

pain, of a heightened sense of life due to mental suffering, of "a yearning after increased consciousness, which leads us to pursue, even at the risk of some passing pain, all feelings and emotions by which our sensation of life is reinforced and intensified"; and cites the self-woundings of the saints and orgiastic self-lacerations of the Bacchanalian phrenzy in evidence. The truth is, as Miss Puffer says, that these pains which we enjoy are not really like the pains of real life, since they leave us in control of the situation; the situation is finally resolved along the line of some habit-system, whereas the genuine sufferings of actual life remain unresolved; the breach in the habit-system is not healed over. For this reason we must assume that æsthetic emotion is always and necessarily pleasurable. A work of art must please, no matter how repellent the subject. Even in case of tragedy and the ugly in art and this so-called enjoyment of pain there must be a preponderance of pleasurable emotion, if the object or situation is to fall within the æsthetic sphere.

In the second place, it is recognized that while within certain limits expression enhances pleasure, it is also true that beyond these limits this same expression diminishes the pleasure.

The explanation is simple: the irradiation of the stimulus to wider areas and neighboring organs results in a greater diversification and intensification of the stimulus, calls into play a richer background of apperceptive habit-systems. What is thus called the initial expression of the emotion viewed from the outside is really a continuation of the summative process by which the stimulus is rolled up until it has called into operation the widest range of relevant reaction-systems. The extent to which this irradiation or so-called expression of the emotion serves thus to enrich rather than to reduce its pleasant quality is determined by the resources of latent or stored energy in the individual, which are capable of being released by this overflow to adjoining areas. Only within such limits is it true that "pleasure feeds and nurtures itself by expression." The Surfeit of Pleasure.

On the same principle it is true that pain grows deeper and more widespread if and to the degree that it progressively implicates adjoining areas and organs so that these too become "tied up" in the total inhibitory process. It is a commonplace that pain is at its keenest when the outward expression is at its lowest, but it is equally well recognized Stimulation and Repose.

that pain often stimulates intellectual activity. This is true, however, only so long as it does not pass beyond a certain degree of intensity, and is due to the fact that in the attempted readjustment a part of the inhibited energy is directed into relatively unused channels. This is the explanation of the so-called chance hits or extraordinary insights — more properly described as the unexpected relevancies — of genius. And just as the extreme of expression reduces pleasure, so, at last, inhibition, if it leads to immobility and depletion of the vital forces, leads to the reduction of pain, culminating in a comatose euthanasia.

It is not an accurate analysis which distinguishes two kinds of pleasure: one in which the satisfaction springs out of habitual, customary, easy lines of activity; and another, the satisfaction which springs from following fresh, stimulating, novel lines of activity, with their potential possibilities of success. The same principle holds for both. Just as it is not habit as such, so it is not stimulation as such, which gives pleasure: it is the relation or proportion between these. The "novel" element liberates and exercises deeply ingrained instincts and habits whose function within normal limits is pleasur-

able. It is the relative freeing of these habits by the novel element, and their tensional functioning within these limits, which constitutes the pleasure and gives repose.

§ 15. FEELING AND THINKING

Feeling, lying nearer action than thought, finds more direct expression in movements of all sorts. Emotional expression is almost wholly instinctive. Given a situation and certain conditions, and we cannot help feeling as we do about it. Every experience which is of interest to us calls forth unconsciously emotional expressions as the sign of its positive or negative value for the life-process. These instinctive attitudes may be so inhibited that they do not find overt expression, but a close examination reveals their presence in the quickened pulse and respiration, in the altered tonicity of the muscles, and in other physiological states, such as changes in the secretion of the glands.

Feeling and Action.

Theories of feeling differ chiefly in the way in which they conceive the emotion to be related to these physiological changes. The central theory, the traditional view, holds that feeling is a primary faculty of the

Theories of Emotion.

mind, dependent on perception and leading to volition, a sort of psychic force pent up in the soul and seeking an outlet. You see a bear, are afraid, and run away. Perception, feeling, action — this is the order of events according to this theory. The peripheral theory of Lange and James maintains that emotion is the reflex in the consciousness of the organism of its overt or incipient acts; the emotion follows its expression. You see a bear, run away, and are afraid. Perception, action, emotion is the order of events. According to the summation-irradiation theory, emotion is conditioned upon organic tension, and neither precedes nor follows but is constituted by its so-called expression in these physiological changes. It is true neither that emotions cause movements (central theory), nor that they are caused by movements (peripheral theory), but that feeling *is* action in its incipient state of tensional conscious reconstruction, as thinking is its later more controlled form.

Analysis of a Cycle of Feeling.

The history of a cycle of feeling is this: In the process of adaptation of the organism in its environment a frightful object is perceived, let us say a bear. This calls out a certain type of reaction. If it results in a satisfactory adjustment, there may be no

consciousness or only a minimal amount. If, however, the responses called forth by this act of perception fail immediately to adapt the organism in the new situation, these propulsive tendencies are checked and thrown back into the organism resulting in the tension of the emotional seizure. Further inhibition of the impulsive outburst which this instigates results in a deepening of the emotion unless control from the higher centres comes in and transforms it into a cognitive consciousness. In any case the emotion ceases only if opportunity is provided for the adequate irradiation of these summated energies.

This analysis, on first inspection, might seem to support the central theory which makes feeling dependent upon an initial act of conscious perception of the danger. But it should be pointed out that in the theory here set forth this initial act of cognition is not a conscious act of perception: it is instinctive or automatic. This difference is a crucial one for the theory. Perception does come first, as the central theory maintains, but only as an attitude, not as a deliberate and conscious process. If this initial perception were reflective in character, the emotional disturbance would not

Automatic Perception.

take place: it is just the blind total character of the perception, with the vague consciousness of inadequacy to meet the situation, that calls forth this tumultuous turmoil of emotion. In most instances the emotional seizure clearly antedates the clear and definite apprehension of the precise character of the stimulus. There is awareness of a fearsome object, a possible source of danger, but this is instantly swamped in the uprush of instinctive response which nature has provided for dealing with such situations. One is often amazed at the animal ferocity with which these inherited traits will assert themselves at times, in reaction to some trifling stimulus, whose real significance is apprehended only after the emotional storm has blown over. The conscious reflective sizing up of the situation develops within this state of agitation only as a gradual control is set up by the inhibitory influence of later acquired habits on these inherited instincts. Thought is essentially the principle of order and organization by which the relative chaos and confusion of feeling is transformed into a higher type of experience.

Feeling is the simplest mode of consciousness because it is the least mediated: it is vague, total, and uncontrolled. It is the first form

which instinctive acts take when they are brought to consciousness in the impulsive emotional outburst. If volition represents the culmination of consciousness as it passes over into the habitual act, impulse may be taken as representing the emergence of consciousness at the point where instinctive reactions come into conflict. Who has not been the victim of stage-fright, or lost his self-possession in the presence of one whose good opinion he was particularly desirous of winning? That clutch at the diaphragm which made you gasp for breath when you tried to speak, and that loss of motor-control which made your movements random and awkward — these were simply the signs of that emotional disturbance which in a less obvious way implicated your entire organism. When we become conscious in this way of some activity which we have hitherto performed unconsciously, we feel rather that it possesses us than we it. This is the characteristic of all feeling before it has been brought under the direction of the intellect. It dominates consciousness. It rules us instead of our being masters of it. This explains the subjective and personal character of the feelings: we may endure a challenge of our ideas but not a thrust

Feeling and Impulse.

at our emotions. These are too much a part of ourselves, which means, strictly speaking, that they are not under our control as are our thoughts.

Feeling and Cognition.

But when we describe feeling as the primitive mode of consciousness, this must not be understood in a sense which excludes all cognition. That the earliest manifestations of consciousness were cognitive as well as affective in character is clear from the fact that they are always expressions of attempted adjustments of the organism. Why should the feeling of pain or of pleasure ever have arisen, if it did not serve some useful purpose for the survival of the animal? And of what service would pain be as a monitor unless the response of the organism involved some perception of the situation? A feeling of mere pain would be of no value unless it stimulated some adaptation, and when this takes place we have all the essentials of the cognitive faculty, involving the projection of purposes or ends and the introjection of means to those ends. Of course, among lower orders of organisms these ends will be projected in a vague and relatively uncontrolled way. It is for this reason that we characterize such a consciousness as predomi-

nantly affective and impulsive, as contrasted with the rational and reflective emotional life of man. And since the primary problems are those of food, shelter, mates, and the like, the earliest thinking is directed chiefly toward the external world. Emphasis upon the self in consciousness comes only with reflective or discursive thought and with the development of a high type of social organization.

Classification of the Emotions.

A genetic classification of the emotions expresses this fundamental significance of pain and pleasure for the preservation of the organism. The egoistic and altruistic, the defensive and offensive emotions developed together. The sensuous and the ideal pains and pleasures cannot be separated. The natural line of cleavage is that expressed by the evolution of animal intelligence itself, in which pain is the sign of failure and pleasure the consciousness of success. Hunger and sex represent the two elementary problems of organic life, nutrition and reproduction, and these are the centres about which consciousness first developed. Pain of failure, of disadaptation and maladjustment; pleasure as relief from pain and the mark of adequacy in coördination — these are the rudimentary lines along which the emo-

tional life differentiated. Fear as anticipatory pain and hope as anticipatory pleasure, anger as anticipatory combat and love as anticipatory embrace — these are the first vicarious substitutes of mental images for immediate contacts. Out of the primal feelings of shock or break in the coördination (which we still retain in surprise, wonder, awe), and the feelings of struggle which arise from the attempt to readjust the situation (which we retain in the feelings of excitement, strain, effort), there developed the definite feelings of pain and pleasure connected with the consciousness of failure or success. These, as Professor Dewey has suggested, may then be further divided into feelings of failure in present adjustment, in past and in future adjustment. Feelings of failure in present adjustment on the bodily or sensuous side are found in fatigue, impotence, lassitude; on the ideal side, in grief, shame, etc. Feelings of failure with relation to past adjustment are exemplified in rankling, regret, remorse. Feelings of failure with reference to future adjustment are seen in fear, anger, hate. Similarly with the success feelings. Feelings of success in present adjustment are seen, on the bodily side, in buoyancy, the sense of power, vigor; on the ideal side, in joy, pride,

etc. Feelings of success in relation to past adjustment are found in relief, gratitude. Feelings of success in relation to future adjustment are exemplified in hope, sympathy, love.

Our thinking is largely determined by our feeling as, of course, our feeling is in turn by our thinking. But the influence of feeling on thought is primary, since thought is originally instigated by emotion. We perceive and perform what we are interested in. This is not to say that feeling is the *cause* of our thought and conduct, but it represents the first stage of activity as conscious. Every conscious act undergoes mediation in feeling and thought. The perception of a stone in the street is ordinarily unemotional and impersonal. The sight of a friend arouses an emotional response. But, except for some interest, even the stone could not become an object of perception. The difference between the two experiences is that, in the case of the stone, the interest has been organized into the system of the habits of the individual, while in the case of seeing a friend this process is not so complete. But whether it be the stone or the friend, every shift of attention and every cognitive adaptation is relative to

Feeling and Interest.

some need, or to a want which finds expression in emotional terms.

Value and Meaning.

Feeling, we have said, is the bearer of the value-consciousness. Its chief characteristic is its immediacy and its integrity. But emotion is valuable not only for its own sake, but because it leads to thought and action. Too much feeling obstructs thought and leads to impulsive instead of reflective action. On the other hand, the more feeling the better, if it is under control. All great men are gifted with strong passions and immense emotional resources. It is not intensity of feeling in itself that we respect, however, but this passion and emotion in the service of high ideals. The feelings, like the appetites, are good — when harnessed. An emotional reaction is a total reaction: cognition implies discriminative analysis. One's first response to a new situation is apt to be indeterminate in character, an awareness in terms of the vague organic and tactile-kinæsthetic sensations rather than in terms of the more accurate imagery of the higher senses. Feeling is distinguished from knowledge by just the difference between this unlocalized and unanalyzed complex of organic sensations and the clear and definite pictures of our auditory and

visual consciousness. The organic, tactile, kinæsthetic, temperature, taste, and smell sensations stand nearest to the life of feeling. Hearing and sight, which are least emotional, have the greatest cognitive significance because of their accuracy of detail in verbal distinctions. Feeling, in a word, is the vague appreciation of the value of a situation, while cognition is a clear and distinct perception of its meaning.

CHAPTER V

THINKING

WE have said that thinking is introducing order and control into experience. But why should we desire order and control? Why not always rely on the more immediate modes of experience such as instinct? Because these often fail us at the critical moment, when they are most needed. Thinking comes in because it is more successful; it is a more economical and expeditious way of attaining our ends than blind instinct or vague feeling. Instinct and habit are useful, even indispensable, where the conditions are uniform; feeling is important as a monitor; but thinking is necessary for coördinations which involve adjustment to variable conditions. A cat may learn to open a door by accidental fumbling. But no cat, as Professor James says, "if the latch got out of order, could open the door again, unless some new accident at random fumbling taught her to associate some new total movement with the total phenomenon of the closed door."

Thought is the Ordering of Experience.

§ 16. THINKING IN RELATION TO ACTION

Thinking arises primarily because of some obstructed activity. It is the mediation or the attempt to mediate an interrupted act. It has been called repressed action. Bain said that thinking is refraining from speaking or acting. Hirn says that the idea of a movement is associated with an arrested impulse to perform it. We say we "stop to think," but that is tautology; the thinking *is* the stopping, the refraining from overt action. The inhibition of the impulse throws it back into the organism and develops that internal tension known as the idea. An idea is thus a delayed or postponed response. Thought is never its own motivation, but goes back to action for its instigation. It arises at the point of some break in the activity — this break presenting a certain difficulty to be overcome. There is never, of course, a complete breakdown, but the adaptation fails, or is inadequate, to such an extent as to bring the process of adaptation itself to consciousness, attention and thought coming in to heal the breach. In this aspect thought is reflective, retrospective. Thinking is the method of action coming to consciousness,

Thought is (1) Reconstruction of Past Action;

for the sake of revision in the light of new conditions. The value of a trained mind consists in the fact that such a person has built up habits of reflective analysis and balancing of motor tendencies. And the value of all tools and instruments of precision lies in the fact that they are the objectification of such habits. This is the significance of libraries, museums, laboratories, and all the machinery of civilization and culture: they perpetuate for us the intellectual devices which have been worked out by our predecessors. All the thinking which goes on in the consciousness of individuals is dependent upon knowledge which is thus socially preserved in available forms. And this coming to consciousness of the technique of past action is the necessary condition of advance in knowledge.

(2) Anticipation of Future Action;

Thinking is not only a statement of the method of past action: it is anticipation of future action. Creative thought is always in advance of production: witness the hypothesis and theory of the man of science. It is true that we are driven from behind by our instincts and impulses, but it is also true that we are lured on by our ideas and ideals. Instinct outlines the main channels of our activity, but reason works out the means and meth-

ods in detail, and thereby reconstitutes the ends originally suggested by instinct. Reflection is always accompanied by prospection, memory by expectation, deliberation by investigation. We reflect on our past experience, but we also prospect, plan for the future. Thinking is dynamogenic and teleological: theory is for the sake of practice. As feeling becomes motivation, so thinking becomes instrumental to action. It not only grows out of the needs of action but points forward to the resumption of the activity in a more adequate form. Thinking as well as feeling has the conative or will element in it. The thinking of a thing is really the first step in the doing of it.

But thinking not only follows action when it is breaking down, stating past method; it not only precedes action which is building up, suggesting future method, but thinking *is* action in its transformation phase. Thought is not something absolutely different from action: it is the activity in a different form. It is central and subtle rather than peripheral and overt; or, to be more accurate, it involves the organic circuits of the finer musculatures rather than those of the grosser fundamental muscles by which so-called overt

(3) Inhibition of Present Action.

acts are performed. Thinking is inhibited, incipient, nascent action — action in the potential phase, as it were, but none the less truly action; just as the energy of inertia is a very real kind of energy. Just as a body at rest really represents an interplay of forces, so thinking may be regarded as a balancing of motor tendencies, a tension of conflicting modes of response. We are first of all active doing beings, and whatever we are in the way of emotional and intellectual beings must, if we go far enough back, grow out of and be related to this fact, that, first of all, we are instincts and impulses to do, to act, to manipulate, to modify and adapt the conditions in which we find ourselves. Consciousness is a sort of vicarious conduct. Through memory and imagination we picture past and future deeds, and act in the absence of the object or event as we might if it were here now.

§ 17. THOUGHT AS THE MEDIATION OF EXPERIENCE

Thinking is Man's Method of Managing his Experience.

Thinking is man's method of managing his experience. It is the attempt to do consciously what it has been found impossible to do unconsciously by instinct or habit. If life is to go on, we must meet the new conditions of an everchanging

situation. This may be regarded as a reconstruction of the old experience or as the construction of a new one. But reconstruction is the key to the process, since it is the old instincts and habits made over which constitute the core of the new experience. A certain part of the whole is set up as an ideal end to be reached, another part is regarded as the instrument or means by which to reach it: these come into opposition and interaction in a process of mediation, and a new coördination is the outcome. As long as a person's experience flows on smoothly, he does not put it in the form of a judgment because he has no obstacles to overcome and hence no problems to solve. We do not think except in relation to some new organization or reorganization of our environment. But when the present action ceases to be harmonious, we begin to look backwards and forwards. Experience polarizes into ends and means. As these interact and grow together in and through the thinking or judging process, a new experience emerges in which means and ends are reunified on a different level. Thought or judgment is the conscious transition from one experience to another.

Thinking is a doubt-inquiry process which

arises in connection with the attempt to solve a problem. Experience becomes problematic when there is some relative failure in adjustment; and this means that some instinct or habit is proving inadequate, so that we come to doubt its further utility in its present form. The process of reconstruction, on the other hand, means that we are seeking a new coördination or a modification of some old habit which will serve to repair the break. Thinking thus presents two aspects, according as it involves a doubt of existing modes or the search for a new and better mode of adjustment.

It is a Doubt-Inquiry Process.

As we have seen, there is never a complete failure. Failure and success are relative matters. A child carrying a plate of soup, from the point of view of the adult may be failing miserably in the attempt, while from the point of view of the progressive development of motor-control on the child's part, his seeming failure is a real success. By failure is meant failure relative to the situation. The significance of failure, from this point of view, is that it presents a difficulty to be dealt with, and in so far as there is seen to be a way out of the difficulty, a problem to be solved. In this sense, failure is one of the conditions of

The Consciousness of Failure implies a Criterion of Success.

success. The only real failure is not to be conscious of having failed. The sense of having failed, like the consciousness of ignorance, means stimulus to new endeavor; something has proved inadequate and we seek something better. It means doing better next time. One says that he has failed in doing a thing only when he has the conception of a superior way of doing it. The consciousness of failure implies a criterion of success. What *is done* is judged inadequate only in the light of an ideal of what *ought to be done*. "The sense of failure is the spur that rides a good horse to success."

On the positive side thinking means inquiry. Every judgment begins by asking a question. It takes the form of a problem. A problem is a situation in which we are not just sure what we do mean or what the situation really is. This uncertainty gives birth to ideas or hypotheses which may be regarded as tentative views of the facts, ideal experimentation with the conditions of the situation. Suppose I see a gold coin on the floor of my library. Under one set of conditions, I say: "Oh yes, I forgot to put that in my pocket after twirling it to amuse the baby." Here the inquiry element is at the minimum: it is just a categorical judg-

Doubt is the First Step in Active Inquiry.

ment of fact. The seeing of the coin passes over immediately into the act of putting it into my pocket. But suppose I have not left it there myself. The sight of it immediately suggests some hypothesis, or several, according to the richness of my imagery and the rarity of such events in my experience. I recall now that I had seen the child playing with something of the kind. But who could have given it to him and why was it not reclaimed? The nurse at this moment comes into the room, and I learn from her that she let the child have it. Immediately I am satisfied. The problem is solved and the hypothetical gives place again to a categorical judgment. But suppose I find that no one in the house can account for the coin in any way. Furthermore, suppose the days and weeks pass and no explanation is forthcoming. I may not keep thinking about the matter all that time, but the interrogatory attitude becomes now a permanent state, and my thinking is hung up in the form of a suspended judgment concerning the mystery.

This reflective or deliberative attitude is the very essence of the knowledge-process. Judgment arises out of a conflict of facts and ideas of possible solutions. Science has vitality, and

is productive just to the extent that it is fertile in hypotheses for solving problems. This tensional hypothecating attitude continues until some provisional hypothesis is hit upon which seems more promising than the rest. This becomes the basis of experimentation, and is then called the working hypothesis. The working hypothesis is the first child to which the judgment gives birth in its travail for a solution. Judgment, hypothesis, and experiment, — these are the tools by which science undertakes the reconstruction of experience.

Judgment, Hypothesis, and Experiment.

§ 18. THE FUNCTION OF SENSATION IN KNOWLEDGE

Since the time of Kant it has been recognized that sense and thought are not separate faculties of the mind but complementary phases of the thinking process. Yet their organic and functional character even now is not fully appreciated. This is due to the fact that the true relation between thought and action has not been understood. But with the advance of genetic and functional psychology we have come to see that the differentiation of the sense-qualities takes place in and through the differentiation of the response. Why does

Sense and Thought.

the group of colors stand out distinctly to me as a rug on the floor, while to the baby it is at most only a confused patch of color, a big, blooming buzz of confusion? Because I react to it in a different way. Optical motor-habits, built up through long training and repeated contact with such stimuli, enable me to interpret them in definite and significant ways. The response helps to select the stimulus.

Sensation not a source of Knowledge.

Yet sensation occupies an ambiguous place in the current theory of knowledge. It is still the assumption of most of our psychology that sensation in some way stands closer to the objective reality of things than does any other part of knowledge. While ideas are said to be wholly mental, sensations are regarded as half in and half outside of the mind. This error crops up in the doctrine of the relation of ideas to things, in the representative theory of knowledge, which holds that the test of the truth of ideas is whether they correspond to the objects of which they are the ideas. It is the old fallacy of opposing the What and the How, the Content and the Process, Reality and Experience. We divorce the *having* of an experience from the *content* of the experience. There is a difference between experience *as* a house

and the experience *of* a house : the one is called sensation and the other idea or image. But sensations lead beyond experience no more than ideas. Sensation and image are merely functional phases of that intellectual reconstruction of experience which we call knowledge.

But a Factor in Knowledge.

A theory of knowledge which conceives of sensation as the avenue by which an outside reality gets into consciousness must face the following difficulty. If, as is often the case, the sensational experience in no way resembles the external reality which it reports, how can we know when our perception is valid or true? Sensations of red do not resemble the vibrations of the ether which are their external condition. How do I get a single upright visual picture of a house, when the retinal image is inverted, transposed, and duplicated? There is no adequate answer to such questions on a representative theory of knowledge. Sensation is not something given from without. Nor is it the avenue or medium by which the material of knowledge is supplied. It itself is the material. It is not a source of knowledge, but a factor in knowledge. Sensation is the statement of the conditions or facts in the problematic situation, as idea is the

statement of the method of interpretation or solution.

Illustration of the Red Book.

In order to understand the true function of sensation in knowledge, we must begin with the concrete situation or experience before any distinctions have been made. I have before me a red-covered book. How do I get this sensation of red? "Why, from the red book; the redness is in the book." This is the ordinary explanation given by naïve common sense. "But no, the redness is a subjective quality," says the man of science. "Only primary qualities, such as extension and solidity, are objective and external. The reality of the red book is so many vibrations of the ether per second; the redness is in you." But a still more sophisticated philosophico-scientific analysis has shown that if any of the qualities or attributes of an object are subjective they all must be. Either color, sound, odor, taste, and temperature are equally objective with extension, solidity, size, shape, or they are all equally subjective, since there is no warrant for exempting the tactile-kinæsthetic sensations in the idealistic argument. The only way out of this dilemma is to go back to the concrete experience, seeing-a-red-book. We must start over again, beginning

with the whole within which the distinctions are set up between seer or subject, redness, and object or book. Making this new start, we discover that the reality of the book is as much in the redness as in the vibrations, and that the reality of myself includes my relation to the book. Knowledge is not a process of representing or referring to a reality beyond the act of knowledge: it is a process going on within the object. Knowledge is the totality of the object or situation undergoing reconstruction. It is the internal metamorphosis of the reality itself. This is the pragmatic or functional theory of knowledge.

Let us analyze the famous child-candle situation, made classic in the writings of the psychologists. The stimulus, the idea, and the act, as Professor Dewey points out, are not three distinct things, but parts of one organic circuit. It is not that the stimulus and the act are physical and the intermediate idea mental: they are all functional phases of one identical situation. The situation in this instance is the total coördination involved in child-seeing-and-reacting-to-candle. The seeing is not mere seeing but seeing-for-reaching-purposes, or seeing-of-a-light-that-means-pain-

Illustration of the Child and the Candle.

if-touched. The response is not a mere responding in general, but responding-to-light-by-touching, or responding-not-by-touching-but-by-withdrawing-the-hand. The distinction between the stimulus and the response and the corresponding sensation and image arises when there is uncertainty, hesitancy, obstruction, resistance, tension in the coördination. The stimulus is not a sensation as long as it stimulates. It becomes sensation when it fails to stimulate. Sensation marks the failure in the coördination. It shows experience in cross-section at the break where the disadaptation or maladjustment has occurred, as geological strata are turned up at the fault-scarp. The whole psychology of sensation and volition is a discussion of the break and of the healing of the break.

Looked at negatively, sensation presents the whole experience in the act of breaking down, while from the positive side it furnishes the basis for readjustment. Thinking is a mode of experience in which the reality or activity which constitutes its content is undergoing reconstruction at the point of some specific need. It begins with the conflict of opposing aspects and consists of the attempt at reorganization by the mutual interaction of

Sensation and Stimulus.

these factors. Stated objectively in physiological terms, these factors are known as stimulus and response. But when these do not function as such, they come to consciousness, when, in psychological language, they are known as sensation and image. Delayed or obstructed coördination is the occasion at once of the statement of the problem in sensational terms and of the formulation of a solution in terms of the image or idea.

§ 19. THE FUNCTION OF IDEAS IN KNOWLEDGE

An Idea is a Nascent Act,

The image or idea in human consciousness is the chief instrument of the reconstruction of experience, since man, unlike the lower animals, has an elaborate system of verbal symbols by which he is able to manage the transitions of his life without resorting directly to the cruder materials of sense. We employ an image when a habit breaks down. When I try to puzzle out the hidden figure in a picture-card, or to guess a conundrum, innumerable images flit before my mind. This means that previously subconscious tendencies come into internal conflict, and, according to the degree and relevancy of the tension and their ideomotor force, emerge before the footlights

of consciousness as images. The searching around for a key to the puzzle is really a struggle between conflicting habits, represented by nascent innervations in the muscles.

Professor Baldwin has called attention to the dynamogenic aspect of all consciousness. All feelings and ideas tend to pass over into acts. An image is an inhibited response. An idea is a conscious habit, a previously unconscious response undergoing modification in thought. Animals have developed ways of doing things, but they are not conscious methods. Man has an elaborate verbal technique by which he is able to control the mediation of his experience by all sorts of indirections and vicarious substitutions. An idea is always an intermediary. It stands between the old and the new coördination. This mediating function arises from the fact that, while the image is the product of a checked response, this is only a partial inhibition. The old activity is continuous with the new in and through this image, which simply represents the habit seeking some more adequate mode of response. As sensation is the stimulus coming to consciousness when and where it fails to stimulate, so the image is the response or habit

An Inhibited Response,

coming to consciousness when it fails to respond.

A person is approaching. What is his name? Where have I met him? Ah, I recall, at the seaside summer resort. This gives the key to the whole situation. Why? Because it gives the connecting link. The image is the handle by which we get hold of a past experience and use it in determining a present or a future one. If every experience were wiped out as soon as it occurred, without leaving any trace, we could not grow in knowledge. The image is a bridge by which we pass over from one situation to another. It is through the image that all transition and reconstruction takes place. The power to form an image means the ability to think one situation in terms of another: it is a kind of vicarious substitute for the fullness of the fact and the act. The educated person is one who has this ability to profit by his past experiences and who can use any one of his experiences to get more experience.

A Vicarious Substitute.

In its backward reference, to past experience, we speak of the image as a memory-image. In its forward reference, to the development of a new experience, we speak of the constructive imagination. Experience embraces the memory of

an historic past, the perception of a living present, and the ideal of a future. Through memory we reconstruct the past, and through imagination we construct the future, from the standpoint of the present. Memory and imagination are correlative phases of the image. As in the case of sensation, we saw that, negatively, it represents obstruction and failure, and, positively, presents the basis and conditions for reconstruction; so in the case of the image, looking backward, ideas are pictures of past adjustments, looking forward, they are plans of action. But these two phases of the image are reciprocally interdependent. We do not seek to recall past experience save with reference to some future end, while, on the other hand, it is only in terms of the past that we can plan future action. In one sense, experience is ever new. In another sense, there is nothing new under the sun.

Memory and Imagination.

The chief difference between man and the brutes is his possession of these powers of memory and imagination. The animal lives in the present. Man has a history and dwells in a world of ideals. Memory probably originated as a prolonged after-sensation, a reverberation in the organism of a stimulus after the crisis

had passed. This became the basis of learning by experience and was selected because of its utility in the struggle for life. The transition from the brute to the human occurred when the animal first became conscious of the fact that intelligence and ideas might take the place of brute force and physical prowess. Indirect reactions became substituted for direct reactions to the environment. The animal did not wait until the emergency was upon it, but profited by past experience and deliberated upon possible future contingencies. Ideas took the place of claws and teeth, and sagacity of fleetness of foot. Man resorted to images instead of arms to settle his disputes, and to discussion instead of personal combat.

The Memory Image.

An image is a habit turned outside in, while a habit is an image turned inside out. Memory is just an expression of the ineffectiveness of habit. We have seen that habit is the process of facilitation by which a conscious passes over into an unconscious act. Committing to memory or learning by rote is an illustration of such mechanization. But it is a curious paradox that, if we should completely memorize anything, it would cease to be a matter of memory and enter the realm of automat-

ism or unconsciousness. It remains conscious only as long as it is not perfectly memorized, only as long as there is enough tension to keep it continually recurring to consciousness. Deliberate memorizing, in fact, forms a very small part of our conscious experience. The greater part of the time the effects of the stimuli which play upon us are registered subconsciously in the nervous system, where they remain in the form of modified brain-structure until the appropriate situation calls them into conscious activity as images. All modes of perception by their frequent repetition drop out of consciousness as they become mechanized, persisting only in the form of intellectual habits. These automatic modes of cognition, so long as they take place along customary lines unimpeded by novel factors, are simply exhibitions of habitual response. But the presence of a relatively new element makes necessary a readjustment, and the clashing and reciprocal modification of these conflicting factors is what is known as the deliberative aspect of the reflective consciousness. In this deliberation the habits of perception which are undergoing revision are represented by ideas or images. The more detail with which the habit emerges, the more concrete the image. Where it under-

goes least reconstruction in coming to consciousness, we get the generic idea or concept.

Memory is thus not a faculty, but a fact of consciousness. Ideas are not stored away as in a cabinet. When they pass out of consciousness they cease to exist as ideas. What is stored up is not the image, but the capacity to produce the image. What is retained is not an idea, but a neural habit which under appropriate conditions is capable of reviving the idea. The fundamental fact concerning memory is the retention of physiological traces in the nerve-centres. When these call out a reaction smoothly, without the process coming to consciousness, we call it habit. When the process of stimulation and response comes to consciousness, we have sensation and image. Memory is simply a bias or set which the organism has acquired, which leads it to respond as it has responded on former occasions. Facts strung upon the invisible thread of some deep-seated habit, by as yet little understood processes of unconscious cerebration, leap into consciousness full-fledged in a way that is unintelligible until we recall the long and persistent effort by which these habits have been formed.

Memory and Habit.

Imagination in the original and literal sense

of the word is image-ination, and would thus include both memory and what is ordinarily called imagination. But the term has come to be used exclusively for the anticipative and constructive phase of the image. In one sense memory itself may be regarded as an idealization, since it is the reconstruction of that which has now only an ideal existence. And, certainly, imaginative construction is not possible except on a basis of memory-images. But, ordinarily, it is the constructive, idealizing aspect of imagination, as it is the reproductive, reconstructive aspect of memory, which is emphasized.

The Constructive Image.

An ideal is the projection of past or present into the realm of possible conditions. All idealization involves abstraction. An abstract idea, indeed, is a tautologous expression, since it is the very nature of an idea to be abstract. If the concrete activity of experience were taking place with perfect adequacy, we would not stop to think, or polarize it into the abstract phases we call sensation and image. But the value of an ideal in such a case lies just in the fact that it gets far enough away from the concrete or practical to see it in true perspective. The commander of an army leaves the bat-

Idealization.

tlefield and views the conflict from a hill, that he may the better through his emissaries control the action on that very battlefield. Every scientific and philosophical law is ideal in this sense.

The highest use of the constructive imagination is in the discovery of new truth and the organization of new ideas. We call that man a genius who has this inventive gift. His originality is comparable to those so-called fortuitous variations in the biological world which lead to the progressive evolution of organic life. By some as yet little understood principle he organizes old elements into such combinations, or brings to light hidden factors in such a manner, as to lead to relatively new ways of doing things. All we know is this, that originality roots in the life of instinct and emotion, and that the greater freedom these natural impulses may have, while yet kept under the control of a rational ideal, the greater is the chance for the evolution of fresh insight and new coördinations.

Invention.

§ 20. THOUGHT AND LANGUAGE

That knowledge is a social product is a familiar idea, but that it is likewise a social process is a conception which has not received the atten-

tion it deserves. In the former sense, knowledge becomes embodied in an objective and more or less permanent form in human language and literature. But this is not knowledge as a vital and developing thing. Knowledge grows through continual construction and reconstruction of its social conditions. Language is the chief sphere of such social interaction, in which selves most adequately share one another's experience by a communication of their more complex emotions and ideas. It has been the chief instrument in raising man above the brutes, because it has been useful at once in perpetuating and in elaborating social intercourse.

Language the Social Aspect of Thought.

Words, to be language, must combine the two functions of communication and expression — communication to another, and expression of one's self. But communication has been conceived as a more or less external process going on between two fixed selves, each of which has his own mental machinery for evolving ideas, this social interaction being a kind of mutual exchange of the finished product, but not having any intrinsic relation to the development of the ideas themselves. This is a mistake. It is no more tru

Communication and Expression.

that the function of language is exclusively social than that the function of thought is exclusively individual. Speaking and writing are the same activity in overt expression that we call by the names of feeling or thinking when partially inhibited. Emotions and ideas are as truly acts as vocalizations and manual inscriptions: they are merely different stages in a common process. Thinking is only an inner speaking, and speaking is thinking aloud. As a vocalization or inscription is a word, in a true sense, only when it expresses a meaning, so a feeling or an idea is such, in the fullest sense, only when it finds objective embodiment and social recognition.

The Process of Communication

Language is communication. Words serve to make thought shareable and socially verifiable. It is mainly by literature, says Stevenson, that the business of life is carried on. But it is an error to suppose that the sole function of language is communication. Equally important is its retroactive effect upon thought itself. As Oliver Wendell Holmes says in "The Poet at the Breakfast-Table," "I talk half the time to find out my own thoughts, as a schoolboy turns his pockets inside out to see what is in them." — "Don't talk, thinking

you are going to find out your neighbor, for you won't do it, but talk to find out yourself." Nothing could be further from the truth than to suppose that we cannot discuss a subject until we have defined our ideas, since it is just by discussion that ideas are defined. And nothing is more stupid than to suppose that the meaning of a word in any vital controversy can be settled by consulting the dictionary or encyclopædia, since these compendiums are made up from the use of words in just such controversies.

At once Individual and Social.

Language is at once social and individual in its function; thinking on its overt or objective side is speech, while speech on its inner or subjective side is called thinking or ideas. Words are not the mere passive instruments or vehicles of thought, but a living stage in its growth. Ideas are not an independent development in the mind of the individual, but are dependent for their growth upon communication, that is, upon their social function and reference. Not as an isolated individual, but as a member of society, has man built up his knowledge. Symbols as instruments of individual thought come later than symbols in their communal capacity. We do not begin

apart, each building up an intellectual world for himself, and then find that these agree or make them agree by social intercourse. The ideas are socially determined from the outset.

Language has as important a relation to the evolution of thought as thought to the evolution of language. A word is not simply the expression of the idea which an individual has in his mind: it is one condition and stage in its development as an idea. Words are expressed ideas, it is true. But it is also true that ideas are inhibited words: thinking is refraining from speaking, postponing the overt expression. Intelligibility is the function of thought rather than of language, while, on the other hand, meaningful language is just thought become intelligible. The little girl who, responding to the leading questions of her big brothers, innocently affirmed that she saw a ribbon and a bell around the neck of the rattlesnake as it glided away into the grass, was using language as much as the child who told a lie deliberately to deceive. The lie, in the latter case, was obviously for purposes of communication. The embroidering, in the former case, was a stage rather in the definition to herself of what she saw. Her speaking, and

The Function of the Word in relation to the Evolution of the Idea.

the others' understanding, was a condition of making her meaning clear to herself.

> The boy learns that my knee is a "knee" [says Professor Baldwin]. He forthwith begins to look upon the corner of the table as a "knee"; so is the end of the stick of firewood a "knee"; the mountain becomes a "big knee," and the pencil should have its "little knee" sharpened. . . . He finds himself straining the meanings . . . in his efforts to make himself understood by others. When he speaks of the "knee" of the table, I fail to understand him, perhaps, and he sees that his first apprehension is in some way not that which gets social confirmation. So he abandons his first interpretation, and either asks me why a table-corner is not a knee, or shows me by pointing what he means by speaking of the table's knee, or waits to hear in my further conversation the distinctions which resolve the puzzle for him.

That is, the child learns better what his own words mean by using them for purposes of communication. He assimilates new meanings to his old ones, on the one hand, and expresses himself socially for the judgment of his fellows, on the other. An idea does not cease to be an idea when it becomes a word. The speaker's meaning is fully *thought out* only when it is expressed and communicated, since in order to become

what, as an idea, it purports to be, it is dependent in part upon the response of the person to whom it is addressed. There is a reciprocal give-and-take in language: the condition of the adequate elaboration of my own thought is that I translate it into words and call out your reaction to them, while the condition of your translating these words into terms of your thought is that you assist me in defining my ideas. Language can fully express thought only by communicating it, while thought can interpret language only by responding to it.

This conception of knowledge as a social process and of language as a stage in the elaboration of thought, solves the much-debated question as to whether thought is possible without words. Is language or thought prior? It all depends upon what is meant by the question. If by language is meant verbal forms exclusively, such as are characteristic of human communication, then it is obvious that thought must precede language. Even among civilized human beings with their complex linguistic systems, the inability of words to express thought is a commonplace. How difficult it is to say just what one means, much more to write it! The import of the terms we use

Is Thought or Language prior?

seems to lie in the accompanying gesture, intonation, inflection, accent, and general attitude, which are capable of only partial embodiment in the verbal forms. The real meaning, we say, is "between the lines." An important part of literary criticism is the interpreting of what an author explicitly *says* in terms of what there is other evidence that he *meant to say*.

Language as a Mode of Action.

But if language is primarily a mode of motor-response, which comes to stand as the sign of some other reaction or group of reactions, then any motor expression may serve as a language-symbol. Examples are beckoning, threatening, raising the index finger, scowling, exclamations, and imitative sounds generally. The spoken or written word is only one form of such expression. Words have proved the most effective instruments for the expression of thought, but they are part only of a great class of experiences which are used as symbols. Pictures are language without words. Geometrical figures are residual pictures. The child finds a meaning in objects and in representations of objects long before he can name these objects or read the description of the pictures in the text. The close relation existing between symbol and thing symbolized is exhibited

by the naïve attitude toward language. To the untutored mind the name and the thing belong to each other absolutely. The thing is unthinkable without a name. Form and content go together in an inevitable way. The name is not merely a convenient tag or sign: it is a part of the form of the thing itself, as much so as its size or color. This is well illustrated in the remark of the peasant: "That the astronomers can tell us how far off the stars are and how they move, that I can understand, but how in the world did they ever learn their names?"

The Origin of Language.

If language is simply a special modification and use of one motor expression to stand for another, thought cannot be prior, for both thought and language are special growths out of action. Intellectual growth, both in the race and the child, is dependent upon that mode of expression and communication of ideas which is accomplished chiefly through spoken and written symbols. Language probably originated in the cries and calls of animals, the vowels first. As Professor Patrick says, the cry of pain, the scream of fear, the shout of joy, the growl of anger, the song of love, and finally the articulate word, are all forms of language. The cry of pain brings food

and aid to the young. The song of love is useful in alluring the desired mate. The scream of fear is a warning of danger. The growl or snarl or roar of anger is useful in putting to flight an opponent. We may imagine the primitive man pointing to indicate the present object; gesturing and grunting to indicate the absent object (expressing thus what he would do if the object were present); then the word, perhaps an evolution of the grunt, comes finally to be taken as the symbol of the past or future act and of the absent object. As an outward sign of thought, Hirn says, action is more immediate than words. In drama we see, as it were, a vestige of primitive language. Vocalization probably took the place of gesture-language because the vocal organs were freer from the immediate economic demands placed upon the hands in the industrial evolution of the ape-man when he assumed the erect stature. Then later, as a leisure class of scribes and scholars arose, because of relative freedom from direct participation in this struggle, it was possible for language again to become manual, and thenceforth graphic supervenes upon oral communication.

We have said that thinking is balancing of

motor-tendencies, that thought is inhibited or nascent action. An incipient act (an image or a word) is taken as standing for the completed performance. Language becomes, thus, the chief instrument of control in thought. If we had to go through the original performance of the act each time we wished to think of it, we never could make any progress in our thinking. The key to the relation of language to thought lies in seeing that it, too, is but a special mode of action. The basis of all language-roots is organic behavior. Using words is making one act serve vicariously for another act. Language is the substitution of a minor for a major part of the process of experience.

The Principle of Vicarious Response.

The important characteristic of language is its symbolic character. A word, whether spoken or written, is a sign. But what do we mean by a symbol or sign? Mental states, mental images, ideas, thoughts, concepts, seem all to possess this character of being signs, symbols, copies, or pictures of something else. What is this peculiar character of some of our experiences which constitutes them symbols or indicators or clues to other experiences? It lies in fact that such symbolic

The Meaning of a Symbol.

experiences are incipient or partial, that is, are either not fully carried out or are part-processes within a larger process. To point at the door is a restraint of the impulse to kick the intruder down the stairs. To speak the word, "Go!" is an inhibited or incipient mode of activity. A glance of the eye, a frown, a thought, would be a still more reduced act. Language consists in letting some incipient or partial form of activity stand for the more overt and complete act: the incipient innervations of the accessory or finer muscles of manual dexterity or laryngeal articulation standing for, and if necessary directing, the grosser movements and coördinations of the fundamental or trunk-muscles. There is a miniature inner rehearsal of the more complete performance on the stage of overt action. Language stands half-way between the gross activities of the larger muscles, such as are employed in locomotion, and these finer and more subtle so-called mental or thought activities which are due to the intercurrent innervations and inhibitions of these smaller muscles. The comparative freedom of the larynx from the more strenuous economic demands put upon the grosser musculatures, eminently fits it for performing this intermediary function between the overt action of every-day

life and the refinements of what we call our inner mental or intellectual life.

It thus appears that a thought or idea is not complete until it breaks over the inhibitions which constitute it as such, and becomes a word. Thought reaches completion only by expression in language-form, only in the act of communication. A word is not a sign or a symbol (that is, it is not really a word) if taken apart from the thought which initiates it or apart from the act to which it leads. From this point of view it becomes clear why it is that communicating my thought in language-terms to you is one condition of adequately defining it to myself.

The Word is the Completed Idea.

Language serves to keep up the tension of thought by bringing past and future together. By means of oral tradition or written documents it is possible for the modern thinker to commune with the sages of antiquity. It is because language serves to keep an end before the mind and to define it, that it has been of so much service in the evolution of reflective thought. It shows the stimuli to action becoming indirect, that is, passing through the medium of consciousness and becoming reinterpreted before the action finally takes place. A

The Value of Language.

word is a device for preserving the meaning or value of former experiences without again going through them. It conserves the thought of the past. It is a sort of memory by which we live over past situations. Language may thus be a help to thought in widening the scope of consciousness: it facilitates abstraction, in a complicated situation, thereby assisting to keep up the interaction between the various elements, distant it may be in time and space, which are necessary to cognitive mediation. In the case of the lower animal this mechanism for keeping up the tension by contextual intensification and enrichment of the problem is lacking.

The Limitations of Language.

But this very facilitation of abstraction has its dangers: it is often a hindrance rather than a help to thinking. Language is a valuable instrument of control in thought, but, as Professor Dewey says, the very meaning of a control-element implies that it is present only symbolically, that is, ideally — not as existent. If it were present as actual existence, it would be the "material" needing control. That is, the control-element depends upon abstraction — letting the part stand for the whole. Now, while abstractions or class-names are a great economy in thinking, in that they retain

the essential while rejecting the unessential, and thus put at our command the central meaning of previous experiences, they do this at a sacrifice of exactness and fidelity in details. It is proverbially true that class-names are especially liable to ambiguity by reason of this abstraction from the concrete situation. If any of our descriptive terms were absolutely accurate, they would be lacking in what is ordinarily regarded as their true descriptive force. It is only because a word slurs over (by abstracting from) the differences, that it can be used to describe more than a single object or situation. It follows that words pay for their general utility by losing in precision as descriptions of the particular case. This is why the language of art is often more precise for certain purposes than that of science or philosophy.

Factors in the Language Consciousness.

The complexity of even the simplest of our verbal experiences has long been a matter of comment among psychologists. The exact determination of the number and relative strengths of the different elements involved is just beginning to be studied experimentally. These factors have customarily been grouped under four heads. A verbal idea, according to Professor Titchener,

consists of an auditory complex, a mixture of clang and noise (word heard); a strain complex, due to the adjustment of the larynx and mouth necessary for the emission of a particular sound (word spoken); a visual complex, a written or printed form (word seen), and the strain complex due to the adjustment of hand and fingers necessary for the production of this form (word written).

In our actual experience these factors are not present in equal degree. Some persons are eye-minded, others ear-minded, others think almost exclusively in terms of acts. But probably in normal consciousness each factor has a more or less influential part to play. The "motor" or kinæsthetic factor is uniformly combined with the auditory and visual. This reduces the four factors in the above analysis to two, which we may call the auditory-kinæsthetic and the visual-kinæsthetic. There is a wide range of variability in the relative proportions which may exist among these factors, and it is this which gives our language its adaptability to so many shades of meaning. This is the psychogenetic source of those formal distinctions which we have introduced into what we call the "correct" use of language. And it is this which makes possible the richness and variety of the

language and literature of civilized man, with his linguistic science and literary criticism.

The part played by the auditory imagery in speech, whether heard or spoken, and by the visual imagery in reading and writing, is matter of common observation. But the fundamental importance of the kinæsthetic imagery is frequently overlooked. It is very much more important than was formerly recognized. Stricker first called attention to the part played by this kinæsthetic factor, and, while his introspective observations may not be confirmed in the case of other persons who have less striking motor experiences, he has certainly shown that the function of the tactile-kinæsthetic imagery is the clue to the function of the other types. Our language-consciousness is simply a special form of that intermediate adaptive or reconstructive process which, in the preceding pages, we have described as the mechanism of transformation of a progressive evolving experience. On its inward or organic side this consists of mutual tensions and inhibitions of incipient activities — giving rise to images of the various sorts we have been describing. The external or overt aspect exhibits these same tendencies finding outward

The Fundamental Importance of the Tactile-kinæsthetic Imagery.

expression in the form of spoken or written words. The unit of meaning in these external, as in the internal, symbols is determined by the act or coördination, and therefore is primarily in kinæsthetic terms. No act gets its full meaning until it is carried out to the accomplishment of an end. No combination of letters or words can have meaning except as it symbolically reflects such an act. And such a unit is found only in the sentence or some larger language whole.

The Unit of Meaning is the Sentence.

This view is supported by the fact that primitive people in writing did not separate their words. The alphabet did not originate until long after the genesis of language. Our literature did not begin as separate words expressive of distinct ideas, which then were welded into the phrase, the sentence, the paragraph, but began as a vague whole which then was analyzed into these elements. In a true logical theory, the proposition does not express a judgment until the words are grasped, not merely as separate units, but as entering into each other, thus becoming parts in a whole of meaning. This is often expressed by saying that the sentence is the unit of language, that is, "a word taken by itself cannot have a com-

plete meaning — unless it is a verb, or used with verbal force, for a verb is an unanalyzed sentence." In truth, neither the noun nor the verb is prior. They arise together, since both are essential to the expression of a unit of meaning. The verb is the most active part of speech, that is, it expresses the dynamic character of the experience within which the distinctions of substantive, adjective, adverb, etc., are set up. A command, a wish, an exclamation, a question, may be viewed as the sentence in the making. They are incipient judgments, judgments before they have become clearly analyzed into the phases which, in the developed form, we call subject, predicate, and copula. When a unit act of thought comes to be stated as a judgment in formal language-elements, it is called a proposition. But here, of course, thought as such has ceased. Mere terms and propositions are not thinking. Thought ever moves on, leaving these inert symbols behind, as the butterfly leaves its dead chrysalis as a reminder of what it once was.

Professor Creighton says that consciousness must be regarded as having from the first the form of a judgment. This is true if by judgment is meant any projection of means and ends, how-

ever vague. In this sense all consciousness and attention imply thought. Judgment is any conscious reference of meaning to fact. There is no thought-process which does not involve some interrelation of means and ends, some tension and interaction of sensation and idea, some analysis and synthesis of a subject-matter in and through a predicated content. The whole process of judgment grows out of the needs of an active experience, and has an intermediary function in such an experience. It searches out the ways and means of action. It is an experience in the act of consciously passing over into another experience, with a recognition of the grounds or reasons for the transition. Conscious experience may be viewed as a series of related judgments. Mr. Bosanquet speaks of judgment as the consciousness of a world, and describes knowledge as the continuous affirmative judgment of the waking consciousness. Philosophy is the widest possible affirmation, which asserts the universe as a great systematic whole; and this is broken up into the myriad specific scientific judgments which state in detail what is implied in this all-comprehensive statement. If experience be conceived as the successive solution of problems, and each

Judgment.

judgment the solution of a single problem, then the history of science may be viewed as one great, prolonged, complex detailed effort to solve the riddle of the universe.

Subject, Predicate, and Copula.

The significance of subject, predicate, and copula lies in the respective functions which they perform in the mediation of experience. The subject is the formulation of the conditions of action. The predicate is the statement of the method of dealing with the conditions. The copula is the attempt to apply the method under the conditions. You wish to become a proficient musician. The impulse or desire to sing and play represents an activity already going on, but in an imperfect and unsatisfactory way. Certain natural gifts, such as good vocal organs, a good ear, pliable fingers, and a certain knowledge of the technique of vocalization and of instrumentation, represent the available material or subject-matter which may serve as a basis for making a good singer or player. This is the side of the subject of the judgment, the means which may be employed, the conditions of action. On the other hand, this desire to become a skillful singer and player involves a conception, an idea, an ideal, which you hold before you

and strive to realize. As your knowledge of the subject enlarges, your ideal grows, and you gain some notion of how to go about to become an accomplished musician. Your vague ideal takes on the form of a definite plan or method of training which will prepare you for the achievement of your desire. This is the side of the predicate of the judgment. Then there is the actual process of learning, of studying and practicing, of striving to actualize this ideal and apply this method. This is the copula, the bringing of means and ends together and realizing the end in and through the means. The copula expresses the movement in the judgment toward the new experience.

CHAPTER VI

TRUTH

§ 21. THE TEST OF TRUTH

THE ordinary conception of the test of truth regards it as the agreement of the idea with the thing, of perception with the object, of knowledge with reality. This is the naïve, unreflective view of common sense, known in philosophy as the representative or copy theory of knowledge. As Mr. Baillie has phrased it, truth consists in the agreement of the object-as-it-is-for-consciousness with the object-as-it-is-in-itself. It is not uncommon to hear even men of science declare that fact is the test of truth. "Here are the facts. There is your theory. Test your theory by the facts." But it is obvious, upon reflection, that the facts as they are in themselves are a mere abstraction. They have become facts only in the process of knowledge, and cannot therefore be used as an external test of the validity of that process. Moreover, if the facts are there before us, why should we trouble to judge at all? What more

The Common-sense View.

do we wish than to have the facts? Why think about them? The truth is that the facts are not presented *to* knowledge; they become facts, *the* facts, *in and by the act of knowing.* It is one of the fundamental misapprehensions of the common-sense and uncritical scientific views to suppose that the fact is not altered in becoming known. In one aspect, of course, this is true: facts are not created out of hand nor spun out of one's inner consciousness. There is one sense in which everything is given. But there is another, in which knowing the facts is just the process of remaking or reconstituting them. If by knowing them we mean anything more than mere familiarity with them and practical use of them, if by knowing them we mean really thinking about them, reflecting upon them, then cognition is more than a merely revelatory process, — it is constitutive and determinative of their nature as facts. This truth Mr. Schiller emphasizes when in his bold way he insists that each individual participates in the evolution of reality. "Nothing is more reasonable than to suppose that if there be anything personal at the bottom of things, the way we behave to it must affect the way it behaves to us."

The fundamental defect of the representa-

tive theory is its assumption of an independent reality to which thought is supposed to correspond in a passive way, knowledge being a more or less faithful transcript of its nature. In the attempt to escape the dualism of this view, the theory of knowledge has swung over to the opposite extreme of idealism, and has sought to find the criterion of truth in terms of thought alone. Formal consistency, or internal coherence of the system of ideas, has been made the test. It must be admitted that consistency, so far as it goes, is a valid test of truth. But an air-castle may be internally coherent. The mere fact of the internal coherence of knowledge already achieved is not a satisfactory test of thinking which has a prospective reference: it must be judged by its success in achieving what it sets out to do. All real judgment is synthetic: the predicate adds something to the subject. No amount of inner consistency can express the positive advance that takes place in an instance of genuine thinking.

The Representative Theory of Knowledge.

No idea is true or false [as Professor Royce says], except with reference to the object that this very idea first means to select as its own object. . . . Is the correspondence reached between idea and ob-

ject the precise correspondence that the idea itself intended? If it is, the idea is true. If it is not, the idea is in so far false. Thus it is not mere agreement, but intended agreement, that constitutes truth.

This idea of "intended agreement" contains the essence of the functional theory of knowledge. It emphasizes the two aspects of the validation of the knowledge-process: truth is that which satisfies a need, and truth must be tested by its results. It emphasizes the organic interdependence of the questions of genesis and validity, process and content, needs and values. It is a protest against the search for that impossible thing — knowledge or judgment in the abstract. Logic has not been satisfied to be what it was in its inception — the generalized method of experience. It has sought a standard of truth which should be eternal and absolutely authoritative. Truth, to be true, it said, should have a universal meaning. It was not satisfied with this or that particular truth, truth in this or that particular situation; it was not satisfied with truths: it sought truth in general — Truth spelled with a capital. But this is to take from logic its only possible significance for the progressive development of experience: it reduces its function to

The Functional Theory of Knowledge.

that of a mere mechanical check upon the accuracy of knowledge after it has been once worked out. Thinking arose originally as a kind of activity to which man resorted in time of special need, and this is still the function of the real thinking that goes on in science and in every-day life. Its validity, therefore, must be measured by its success in dealing effectively with the problems presented by such a need.

There is certainly grave danger of this aspect of pragmatism being distorted into a false doctrine. It is so easy, in setting forth the view, to fall into modes of statement which assign a causal efficiency to these practical needs or demands. The critics have not been slow in finding such vulnerable points in the pragmatist's armor. Needs, as they point out, do not explain anything. They themselves require to be explained. The tension, the struggle, the difficulty, the problem, is not the "cause" of the consciousness which it is said to call forth. Such an expression is only a figure of speech. Tension in adjustment, reconstruction of activity, *is* consciousness. The need is not an external thing, which compels us from without: it is itself a development within experience. Need is the experience regarded as

Truth is that which satisfies a Need.

inadequate and therefore objectified as stimulus over against the self which for the moment is identified with the response. But the need is just as much mine as the deed.

Truth is that which "works" in relation to a Purpose or End.

It is implied in what has been said that the validity of a knowledge-experience must rest ultimately on its results. The criterion of truth is to be found in the relevancy of the thinking, not only to the needs which called it forth, but also to the ends to which it is directed, which are a projection of those needs. The essence of a criterion lies in its applicability to practical problems — using the term "practical" in the wide sense, to include all the non-logical modes of experience. It must have the capacity for measuring the real values of life and for guiding conduct in the attempt to realize these values. The test of a standard is to be found in its serviceability under a variety of conditions. If it is not capable of concrete application to these conditions, it betrays its imperfect development as a standard: there is still lacking that unifying function of thought which brings all parts of experience to bear on the particular case. "There is no other test of a theory than this, its ability to *work*, to organ-

ize 'facts' into itself as specifications of its own nature." (Dewey.)

But this likewise must not be interpreted in a sense which makes the results external to the process of thought. If the truth be one thing and the practical consequences a wholly different thing, then pragmatism is not true. But if having practical consequences is necessary to constitute truth, if practical outcome in action or in some other immediate form of experience, such as feeling, is necessary to fulfill it even as thinking, then there is reason in a doctrine which holds that "the truth of any statement *consists* in its consequences." (James.) Need and supply, stimulus and response, conditions and results, are ways of stating the same process from different points of view.

Mutual Implication of Needs and Results.

Every idea must be judged by its own specific purpose as an idea. Ideas, as Professor Royce says, "are like tools. They are there for an end. They are true as the tools are good, precisely by reason of their adjustment to this end."—"Is a razor a better or a worse tool than a hammer?" The question has no meaning, asked in this abstract form. There is no purely abstract standard. There

There is no Truth, but only Truths.

is no final and infallible criterion of truth. It is final or satisfactory only with reference to the particular problem. It is final in the sense that, if successful, it disposes of the specific difficulty; this particular readjustment does not have to be made again. A statement is true in a given case, for a given purpose, or at a given stage of experience. Truth itself is a growth, changing from situation to situation. This is not to say that there is no stability, no continuity. But it does assert that the principle of continuity in experience is not some unchanging *a priori* law, some so-called first truth, determining thought from without. Truth involves interaction of means and ends, and since experience is an ever-expanding activity, the standard of what is true or adequate grows with this expanding life. It is not a question of truth but of truths, not of validity but of specific validities. There is no single criterion of truth because there is no single truth. For this reason truth, like virtue, is always a compromise: it is the organization of *all* the factors of the situation, no matter how recalcitrant they may at first appear to be. Error is not removed by denying it: it disappears only in being transformed into truth by being put into its proper place in relation to other partial

truths. This is mere empiricism, says the absolutist — and turns to the contemplation of his eternal verities! A naïve and crude relativism, says the formal metaphysician — quite too useful to be true! But to what a pass has philosophy come when the primary evidence of experience is despised! Is it because truth is so simple and so easily understood, when clearly stated, that it must be cast out of the realm of metaphysics? Has not human knowledge protested against the tortuous evasions of its professional purveyors from the very beginning? Shall it not stand forth in its simplicity and forcefulness, shake off the fetters of a false intellectualism, and proclaim its primal birthright and destiny?

The criterion is the habit brought to consciousness. The most comprehensive habit or system of habits, taking form in consciousness as an image or idea, is the ultimate standard. Primitive peoples and children have no criterion: they act on impulse. There is little or no reflection or prospection. But in the reflective consciousness the conflict of habits produces the image or idea which becomes an ideal or standard, a guide or norm. An ideal is ordinarily thought of as having reference to an act which is yet to be performed, while a stand-

The Criterion is the Habit brought to Consciousness.

ard is regarded as the test of acts that have already taken place. But in the larger sense, which embraces the reference forward and backward, the standard is only the generalized ideal, while the ideal is the specific definition of the standard. As Professor Dewey says, "If we look at the whole activity as that which the agent is urging towards in every act, it is ideal; if we look at it as really deciding the nature and value of the act, it is criterion."

The criterion represents the emerging into efficacy in consciousness, of the habit most fundamental and relevant under the circumstances. As directive, the criterion is the image, idea, or ideal—the habit undergoing reconstruction. The generalized habit, looked upon as a goal to be reached, is the ideal. As evaluative, the criterion is the image or idea used as a standard or test of values. The standard is not, however, an external point of reference, but rather a principle of method. An ideal is not a realm of experience different from actual experience; it is experience in process of mediation. The truth is that we recognize the criterion as criterion only when we cease relatively to use it as such, and then it has ceased to be anything

The most Fundamental Habit becomes the Directive Ideal and Evaluative Standard.

merely present: we have projected it into the past or future. When we are directly engaged in applying standards and in actualizing ideals, we do not stop to think of them as standards or as ideals: they are merged in the experience itself, they are at work — not primping before the mirror of introspection. A criterion stands out separately as such only when it ceases for the time being to be actually used and is made, instead, the object of thought. If it does not suffice to solve the problem which the difficulty presents, attention is directed to it. It is in the reconstruction of criteria that criteria arise. We reflect on our past modes of action, and thought is directed to their modification with reference to more effective future action. This conception of more effective action we set up as the ideal. In other words, the criterion arises only when we have reason for doubting, for criticising, and for reconstructing values which have been previously taken for granted. It is developed at the point where these values prove inadequate to meet the situation. Present experience falls apart into past and future, into habit and ideal, and in the event of a past habitual line of activity failing to resolve the problem, some idealized end or aim becomes the standard of evaluation.

From what has been said it would seem that there is no fixity, no permanence, no stability, in the criterion. It varies not only from individual to individual according to their different types of experience, but from moment to moment according to the diversity of the individual's interests. If judgment is the act of hypothesizing in the presence of an obstacle, a process which is ever being renewed because of fresh difficulties, then the criterion, which is simply the judgment in its aspect as reorganizing experience, must likewise undergo alteration from situation to situation. Every judgment involves, at least implicitly, that my present criterion is judged true or false, right or wrong, in comparison with one still more comprehensive. The shifting character of ideals and standards of conduct is a matter of common observation.

The changing Character of such a Criterion.

The question, however, is not whether a criterion is to be wholly fixed or wholly unstable. Such a question would involve an absurdity, for fixity and changeableness have significance only in relation to each other. The question is rather in what sense and to what extent a criterion may be fixed, in what sense and to what extent it may be chang-

The Element of Stability.

ing. Our examination of the criterion as a phase of the judgment has brought into prominence its developing character. But this very process implies also that it shall be in some sense stable and permanent—we do not say fixed, because this implies a state incompatible with change. It is impossible, in the development of various hypothetical solutions for the problem, that we should hit upon an hypothesis which is entirely unrelated to our previous experience. The process of judging consists in the selection of the hypothesis which will be at once suggestive in the new situation and congruous with our previous experience. This congruity is the element of stability. A criterion must always have a certain degree of permanence. If experience is to be experience at all, it must be a continuous identity in difference, a permanence in the midst of change. There is a unity and continuity of function. The criterion serves always the same general purpose, that of control. It would be a mistake to assume, because there is no objective standard in the sense of a fixed eternal law, that there is no objectivity or permanence whatsoever. The objectivity comes from just that congruity and relevancy which makes experience an intelligible whole.

It may be said that the permanence or relative stability of the standard is for the sake of greater range and flexibility in its use. In the most common use of the word, a "criterion" is conceived in static terms as something complete and final, a finished product, rather than a present process in experience. It is thought of as something immutable, by which to check and control the diverse and changing current of life; and the inevitable result of this petrifaction of a part of experience is that it becomes projected out of the central current and set up as absolute. This split-off portion is then used to evaluate the rest of experience, as a man might cut a branch from a tree to measure the length of its trunk. This partial aspect is usually individual and subjective in character. But just as the branch is not an adequate measure of the tree until it has been itself subjected to some other generally recognized standard, and as even this standard by which it is corrected varies from age to age and from civilization to civilization, so this merely subjective standard of the individual, in a social environment, must constantly be revised to be of greatest service. The way in which the social sanction influences the criterion, and the criterion then reacts into

The Element of Flexibility.

the social sanction, is seen in the recurrent fads of fashion. Some representative individual displays a new form of neckwear, and the unreflective many copy it. Some vulgar caricature of this reacts on the aristocracy of dress, and again some original, and at the same time representative, individual suggests a new form for the fashion-plates. But the fad is never wholly new. A close analysis discloses a continuity of development. The apparently unique origin of the new is really but a modified reflection of an old social habit.

§ 22. THE PRINCIPLE OF RELEVANCY

This dynamic nature of the criterion has been pithily expressed by the statement, "It 's true if it works." This phrase may be permitted if we put the right meaning into "works." In one aspect, as we have seen, the test of truth is whether or not it furnishes an adequate basis for action. Truth means control. That knowledge is true which gives order and direction to further experience. The test of truth is not in the judging itself as a thinking process, but in the act or in some other mode of experience which transcends thought. In another aspect, however, a judgment is true or

Validity.

false only in the light of subsequent judgments. Here is the truth and also the limitation of pragmatism. The doctrine rightly insists that a judgment is true or false only if it serves the specific purpose which called it forth, only if it mediates the value called for by the idea. But the mere ideomotor nature of thought does not carry with it the character of truth or falsity. A judgment does not become true simply by coming to an end as judgment and entering into an act or state of feeling. Truth or falsity involves comparison of two or more judgments. A judgment becomes true or false only when reflectively scrutinized and evaluated from the standpoint of a new judgment. There is no necessary inconsistency, however, between this statement and that of the pragmatist. The function of judgment *is* to mediate something which is not judgment. But a judgment which literally and completely ends in an act is no longer a logical process; hence there can be no question for the time being of its validity. For such a judgment to be true, it must either have mediated further thinking or have been resuscitated after the act has been performed. Probably the former is the more familiar experience, since our problems grow one within another in an organic way and

are not, as a rule, chopped off short by final solutions. The test of the truth of an experience, therefore, is whether it enables us to move on to further experience. Truth means value for determining further values. The next experience to which it leads may be cognitive as well as affective or motor, but in that case it is thinking in its immediate, not in its mediative aspect, which supervenes, while this in turn develops a mediative function when it is used to evaluate the logical process which led up to it. In this sense we may adopt the phrase of the formal logicians and say that the validity of thought lies in its reference.

The pragmatic criterion is the principle of relevancy. Utilitarianism illustrates its application on the practical side; æstheticism, on the emotional side. On the intellectual side, relevancy is but another name for the functional distinction of means and ends. There are no fixed ends or means. Any phase of experience may, under relevant conditions, become means or end to any other phase. In the given situation the end is relatively constant, the means variable; but when the end varies beyond a certain point, we say that the situation has shifted. Ends express the purposes, values, uses

Relevancy.

of experience; means are the tools, instruments, machinery of progressive achievement of these ends. This is an age of emphasis upon means rather than upon ends, methods rather than values, machinery rather than humanity. A man of wealth is called a man of means because he is well provided with those things which will minister to his needs and wants. On the other hand, a man of judicial mind, the man whose judgments are reliable, is the man who has acquired the habit of estimating things in a relevant scale of ends or values. An end is always something that we have not, but desire to possess, something which is taken as sufficiently dependable to warrant our instituting an attempt to attain it. Our interest in the steps necessary to secure it gives us the statement of the means. Relevancy is the determining principle. If I am out hunting, my interest is not the living rabbit but the dead rabbit, the possibility of a rabbit-stew. My end might conceivably be a live rabbit in a cage for my children to play with. But the end is always determined by my needs or interests. The means, on the other hand, take form with reference to the end. We distinguish the various factors or conditions requisite to carry out a given course of action.

We unify this variety of elements with reference to the purpose in view. The whole logic of experience consists in stating the technique by which we break up a situation into its diverse factors, and recombine them functionally with reference to some projected value as an ideal. When the situation is stated in terms of means, we emphasize its continuity; when it is stated in terms of ends, we emphasize its discreteness. Since means and ends are strictly correlative, these principles mutually presuppose each other. Means are means only because they serve to realize ends, and ends are ends only as they employ instrumentalities or agencies. Reality not only admits, but demands, both a mechanical and a teleological explanation. The great fallacy of naturalistic and agnostic science is that of mistaking the means which it has elaborated for the ends to which, in the last analysis, they are relevant. The great fallacy of transcendental and speculative philosophy is that it fails to recognize that the means are organized into the ends, that the values come to be restated in terms of the instrumentalities by which they are evolved.

But truth, besides being a matter of logical consistency and practical utility, includes a

reference to the emotional and social conditions.

Congruity.

Truth is a form of value: its value lies in its ability to mediate other values. This was expressed in a striking way by Hume when he said: "Reason is, and ought only to be, the slave of the passions, and can never pretend to any other office than to serve and obey them." Perfect knowledge, as Professor Dewey says,

> is not knowledge (in its intellectual or logical connotation) at all, but such a thing as religionists and practical people have in mind; an attitude of possession and satisfaction — the peace that *passes* understanding. . . . Knowledge, in the strict or logical sense, mediates . . . immediate valences or worths; and, when it has completely wrought out a certain equivalence, finds its own surcease in a new value, expressive of a new æsthetic-moral attitude.

Knowledge is of two sorts: the immediate acquaintance with, or knowledge of, a situation, knowledge in the sense of familiarity, and knowledge about the situation, or what is called validated or certified knowledge. The latter is usually an instrument for securing the former. In its primitive unsophisticated form, knowledge is saturated with emotional and social values. It is only with the advance of scientific and reflec-

tive thought, with its attempt to eliminate the personal equation, that this aspect has been ignored. But it is an error to identify knowledge with either the primitive or scientific stage, since the characteristics of each are essential to complete the other. Knowledge as the immediate total appreciation of a situation is dependent upon past processes of intellectual analysis, while knowledge as critical validation is for the sake of more effective appreciation when the possibility of deliberative analysis is precluded.

Acquiescence and Imperative.

There are degrees of assurance or validation in judgments. That is, there are degrees in the extent to which the personal and emotional element may be eliminated. One judgment is felt to have more objective truth than another, to carry with it a certain necessity, universality, and self-evidence which another lacks. Judgments which express the least and the most assurance, respectively, Professor Dewey has called judgments of acquiescence and judgments of imperative. Of course, all our experiences are inevitable in one sense, while in another sense they are free determinations. When the act of judging is at the minimum and the content most resistant, we have acquiescence; when the content is least re-

sistant and thought most spontaneously active, we have the imperative. These are limits between which all thought moves — the attitude of assent and the attitude of command, expressed in the indicative and imperative moods of the verb. If I say, "I see a hat," the object seems to force itself upon me: to all appearances thought is passive. I cannot help seeing it if I open my eyes. This is not strictly true, of course. Thought is not purely passive even here. The baby does not see the object *as a hat*. It is just thought which makes the difference between what the child and what the adult sees in a thing. Even in the case of a clap of thunder, where it would seem as if the experience were forced upon us, thought makes a difference. The hysterical woman reacts in a different way from the strong man. But if I say, "It is seven o'clock and I will arise," we have an entirely different sort of experience. I feel that I do not have to get up unless I wish to. The judgment seems to involve an active participation in and determination of the result. Volition is the typical form of this kind of judgment. Instead of the content determining the thinking process, the latter appears to determine the former. Here, too, the statement must not be taken absolutely, however,

since even so-called free activity must observe conditions. There are no pure judgments of acquiescence and no pure judgments of imperative: the former would mean impotence, the latter omnipotence. A pure judgment of acquiescence would not be a judgment at all, but an act of obedience, subjection to authority. But the moment doubt and reflection begin, the imperative element enters, and according to the success of the mediation we get the different degrees of modality in our knowledge — belief, conviction, certitude. Arrest of the imperative gives us the optative mood, judgments of wish or desire, the basis of the æsthetic judgment, or, in extreme form, the ethical judgment of "ought." The emotional factor, in other words, falls between the limits of acquiescence and imperative, and marks the different stages of the mediative or reconstructive process in which experience is moving on to new values.

§ 23. THE PROBLEM OF AUTHORITY

The history of thought has witnessed the development of two types of theory as to the character of the criterion. These may be called the transcendental and immanental. The transcendental theory looks upon the criterion as

external and absolute. The immanental looks upon it as internal and relative. The historical growth has been from the externalism and absolutism of Ancient and Mediæval, to the internalism and relativism of modern thought. The chief characteristic of the earlier view was invariably to put the criterion outside the self and make it absolute, while the tendency of the later view is either to deny the existence and necessity of any standard whatever or to find it within experience itself.

Transcendental and Immanental Theories.

The best illustrations of the first type of theory are to be found in the political and ecclesiastical history of the Ancient and Mediæval periods, where a civil or religious organization embodied the standard. The political illustration may be called imperialism. According to this conception, the highest authority was the State. The intellectual, the moral, the religious, as well as the secular life of the individual, was under the absolute control of the chief ruler in civil affairs. This conception prevailed in the Oriental and Græco-Roman civilizations. In the Orient the will of a despot was the only conscience of the individual, or the criterion was one of custom and habit, a conventional obedience to externally

Imperialism.

imposed obligations without reflective insight into their significance as standards. In this sense, it may be said that the criterion had not yet become external. Nor was it internal. It was the undifferentiated matrix out of which were to develop later more conscious statements, which first took the transcendental form. Greek thought emphasized the universal factor in experience, thereby sowing the seeds which sprang up later in the abstracting and hypostasizing of that factor as something external and absolute. Early forms of Christianity, in their extreme emphasis on the opposite principle of individualism, aided in the growth of the transcendental conception, since the more the abstract particular became emphasized, the greater appeared the chasm between it and the abstract universal. With the dawning of a reflective self-consciousness this universal, on the one hand, was projected outward in the form of an external and fixed objective world, while, on the other hand, the abstract individuality of experience became in like manner internalized as the subjective psyche. The State, as the part of this external world which most immediately regulated the actions of men, was the first to become exteriorized as an ultimate authority.

In spite of the great strides toward the subjective attitude which reflective thought made in Plato and Aristotle, these great thinkers practically identified the life of the individual with that of the State. It is only with the beginnings of Christianity that we have the first distinctive contribution to the rights of the individual.

The transcendental conception of authority, on the religious side, takes the form of ecclesiasticism. Here the State as well as the individual, in theory at least, is made subordinate to the rule of a religious society. Not that this was the case at first. The Church did not immediately develop an exclusive claim to authority. But this marks its historical trend and outcome. From the first claim to papal primacy by the Bishop of Rome in the early centuries, to the recent decrees of the Vatican Council asserting the official infallibility of the Pope, the Roman hierarchy has attempted to elevate an ecclesiastical institution above not only its own original purpose, but above all aspirants to any degree of authority. The State has been constantly threatened by its power. Individual reason and conscience have been ruthlessly sacrificed to its absolute supremacy. The right of private interpretation

Ecclesiasticism.

of the Christian Scriptures has been trampled upon. In this movement the principle of subjectivity has taken its first great step toward that individualism which in its extreme form was not developed until the period of enlightenment in the modern era. The individual, in principle, has emancipated himself from the State. But this freedom is turned into a new slavery — a slavery to the Church. The modern idea of freedom was not there, or only its dim adumbration. Thus, when the State was forced gradually to yield its absolute claims upon the individual, the latter was not yet ready to recognize and use his freedom. The criterion was still conceived as external and transcendent, except that it was transferred to the religious in place of the political institution. Significant, however, of the advance of individualism was the bitter strife between the State and Church which marked the whole of this period; for when abstract universals come thus into opposition, they cease to be true universals and become particulars. The failure of ecclesiasticism to win universal sovereignty was not because of any lack of definite aim or bold intent, but because it had to contend with another, its equal, the temporal or civil power.

While these wasted their strength in a prolonged conflict as to which should have universal dominion, the individual stepped to the front, and in the name of free speech, free thought, and free conscience claimed for a democratic civilization the prize which was the bone of contention. Christianity had in it the germ of those principles of democracy and religious tolerance which characterize the modern era; but these seeds of individualism were obliged to lie dormant for centuries under the tyranny of an intolerant priestcraft.

Literalism.

One aspect of the externalism and absolutism of this period is what may be called the bibliolatry or literalism of the Church, in which the seat of highest authority was made a book or a creed. This is characteristic not only of Romanism but of post-Reformation Protestantism. The employment of a creed as the test of truth is the offspring of an illegitimate use of the Hebrew and Christian Scriptures, due to false conceptions of the nature and extent of their authority. The Bible was subordinated to the Church during the Middle Ages, under the influence of Roman sacerdotalism. It was revived, however, by the precursors of the Protestant revolution, and

later became what is known as the "formal principle" of the Reformation. Naturally, perhaps, but none the less disastrously, the Protestant body transferred to the Bible the exclusive idea of infallibility. Not until the seeds of skepticism had been sown far and wide did a more moderate Protestantism break away from this post-Reformation dogma of the infallibility of a book and assert a more rational doctrine.

This marks roughly the end of the objective era, or period of the exclusive reign of the transcendental conception of the nature of the criterion, and the beginning of the subjective era, or period of the conception of the criterion as immanent. It is in this transition from externalism and absolutism to internalism and relativism that the idea of the external authority of tradition gradually gives place to the idea of reason as an internal criterion. Of course these movements overlap. What is here outlined is merely the trend in the growth of the idea. But in this sense the immanental conception is essentially modern. It is represented by rationalism and mysticism, in one sense antithetic, but both, in another sense, manifestations of the same reaction against the transcendental conception. These theories place

Immanental Theories.

the standard in the self or individual experience.

Rationalism. Rationalism is a rebound, on the one side, from the externalism and absolutism of which we have been speaking, and, on the other, from the mysticism of which we still have to speak. The essence of rationalism is exclusive reliance upon the intellectual or logical faculty. In its modern form it dates from the skepticism of the Renascence, finding its most consistent outcome in the negations of Hume. Men began to realize that the world of reality about them, seemingly independent and external, crystallized on the social side in the form of such institutions as the State and the Church, is not a mere objective brute fact which is forced upon them by external authority, but a direct outgrowth of human needs and activities to which they must be brought back to find their ultimate meaning. Thus experience itself came to be conceived as the standard or criterion. Men began to see that the institution is for the individual as well as the individual for the institution. This new idea broke upon the world at first, however, as a half-truth, emphasis upon which led to the extremes of individualism. The natural accompaniment

of this purely internal or subjectivistic conception was a relativism which asserted that there is no categorical, but only hypothetical, certainty. Even so profound a thinker as Kant, under its influence, thought it necessary to defend separate grounds for knowledge and faith. Both the strength and the weakness of rationalism lie in the annunciation of this half-truth: its weakness, in the confessed abjuration of all authority; its strength, in the exaltation of the intellectual nature of man. Certainly we find in the use of the reason an inalienable criterion of what is true and right — but only if conditioned by a just appeal to objective testimony.

Mysticism is likewise a reaction against externalism and absolutism, but it is a rebound also from rationalism. It exalts the subjective and emotional factor at the expense of the objective and intellectual. In the mediæval period it may be regarded as a reaction from the ritualism of Rome and from the formalism of the Scholastics. In the modern period it is a reaction against rationalism, especially when the latter tends toward a scientific agnosticism. In one aspect, mysticism is the apotheosis of feeling. It emphasizes the religious sentiments and issues in a tendency to mate-

Mysticism.

rialize the forms of religion. In this aspect it becomes either an ascetic rationalism or a gross fanaticism. In another aspect, mysticism emphasizes the instinctive or intuitive use of the reason, the so-called inner sense. Immediacy is made the ultimate test of truth. On this side it tends toward either a hedonistic individualism or a pantheistic idealism. In both forms mysticism is inconsistent, although it obscurely states an important truth lost sight of in the extreme forms of rationalism. But the criterion here also is conceived as internal and subjective, and thus as relative and particularistic.

The problem of authority is really the problem of the discrimination of authorities. There are different degrees of truth and reality. Historically, authority, on the social side, has resided in the family, in the tribe or clan, in the civil or religious institution. To-day we are in a transition era in which these conceptions are undergoing reconstruction. Consequently we find, as perhaps in no previous age of the world, a veritable Pantheon of authorities. Here, it is the authority of the State which is supreme, even in religious and scientific affairs. There, it is the authority of the Church. Yonder, there is discontent or open

The Multiplicity of Standards.

revolution, with the threatened overthrow of all authority. Here, we have individualism; there, socialism; yonder, anarchism, with its attempt to undermine all institutional life. Our very language and literature are permeated with it. We hear of the authority of precedent, the authority of antiquity, of expert testimony, of authentic records, of legal documents; the authority of experience, of character, of the common consciousness or consensus of opinion. We never get away from it. We merely set up one authority in place of another. The result is that among the educated and cultured there is coming to be a tolerance, by one person or class, of the criteria of other persons or classes. The world is coming to see that there may be authorities as well as authority. What was once true is not necessarily always true. The consensus may be wrong and the individual right. The authority of precedent and of expert testimony each has its limitations. Authority must be discriminated.

Authority, in some sense of the word, we all rely upon for the majority of our beliefs. In no case is what a man calls his knowledge wholly verified in his own personal experience. A great part of his information is obtained at

second hand, is taken on the testimony of some one else. So long as men depend upon indirect evidence for the body of their beliefs, so long will the sources of the knowledge thus derived be recognized as authorities. The existence of reflective thought is itself an acknowledgment of the necessity of a sanction for our beliefs. The determination of the nature of this sanction was one of the problems of the Greeks, but it received only a partial analysis at their hands. The dualism of the Middle Ages was the result of the unanswered questions they raised. But ever since the awakening of thought in the Renascence, and the quickening of conscience in the Protestant Reformation, the problem of the criterion of truth has been a leading one in both its logical and its ethico-religious bearings. At the present time there is a growing demand for the reconsideration of the ultimate basis of certitude as regards both what is true and what is right. With some, the hope seems to linger, of finding a fixed, infallible, and final authority. They are not satisfied with relative and derivative standards. They seek certainty, especially in matters vital to morals and religion. With others the interest in the problem has become a merely negative one.

The Demand for a Final Court of Appeal.

They have seen the purely arbitrary nature of certain forms of authority, and conclude that all standards are of the same character. Finding what they once believed to be firm ground slipping from under their feet, they imagine that all foundations are insecure, and become skeptical and pessimistic. Still others, seeing further, and realizing that license is not liberty, from motives either of truth-seeking or expediency, look for a middle path or golden mean between these extremes. Many are finding solutions which are not only false in theory but pernicious in practice, leading to indifference or unbelief. But ferment and inquiry are signs of a profound faith in truth, and the intellectual unrest of the age is a sign of its moral earnestness.

Authority and Freedom.

The principle of authority apart from freedom stands for tyranny. Every individual has within him both principles. Authority means order, coördination — not subordination. Freedom means flexibility, liberty — not license. Just as in the education of the child there comes a time when imitation begins to yield to originality, when the child begins to comprehend the principle on which the parent acts, and just as, if he keeps on and comprehends the genesis of this principle from

deeper principles, he emancipates himself from the position of mere tutelage, so in the moral life, so far as the great truths of the universe are comprehended by man, external authority becomes transformed into inward freedom. It is the truth that makes us free. Authority is not destroyed for the sake of freedom, but is the means of setting us free. It is as useless in the end as it is irrational and immoral throughout, to attempt to override reason and conscience by the mere might of an uncriticised authority. Only so far as the great and difficult task of uniting freedom with compulsion (a compulsion springing from reason rather than fear) has been accomplished in the individual and in the race, has a sound basis been laid for a true attitude. Might and right, force and will, authority and reason, need not be conceived as standing in opposition to each other. Right essentially is mighty, will is forceful, reason is authoritative. One does not abnegate selfhood when he yields assent to authority. Submission to rational power is the highest expression of reason. Man is never more man and never more free than when he accepts truth and right. But these are not absolute and fixed criteria; they are working hypotheses. The failure most men

make, says Professor Dewey, is in setting up a standard "authoritatively instead of experimentally."

The word "authority" has been used in two important senses: as opposed to reason and as the expression of what is essentially rational. There are two kinds of authority: the authority of coercion and the authority of rationality. In the former sense, it is equivalent to power-to-enforce-obedience (Δύναμις, Potestas). In the latter sense, it is equivalent to the right-to-command-obedience (Ἐξουσία, Auctoritas). In the former sense it implies power, might, coercion. In the latter sense it implies, in addition to this, intelligence, right, reason. The seat of highest authority in the former sense would be the greatest power: might makes right. The seat of highest authority in the latter sense would be the greatest rationality: right makes might. Each use of the word contains an important truth. Authority involves both power and right: the power-to-enforce is backed by the right-to-command. Any other use of the term makes obedience blind and credulous instead of voluntary and intelligent. Authority is the admitted right to command combined with the power to en-

The Two Kinds of Authority.

force the assent of the reason. Chronologically the right-to-command and the power-to-enforce are not separable; logically the power rests upon the right. Authority as power is the social side of the criterion; authority as right is a synonym for individuality. But individual initiative and social imperative have meaning only in terms of each other.

If one asks, "Why have a standard at all? Why not be free from all restraint?" the answer is that it is impossible to be free in this sense. Man, if he would, could not escape authority. Even if a man has faith in nothing stronger than his own unbelief, that alone will save him from utter disruption. This very unbelief is a search after something better than itself. Nothing is more instructive than the history of the emergence of the higher forms of authority which are now regnant in the world, from the lower, the authority of coercion giving place to the authority of reason — fear, which is submission to the authority of mere force, giving place to faith, which is submission to the authority of rational conviction. The same is true in the development of the individual. Many of the beliefs which in youth are accepted by sheer unquestioning

The Discrimination of Authorities.

obedience to the dicta of others, later on become established through their own power and upon their own foundation of rational merit. Just as in the history of nations we see institutions, which have been established to fulfill certain ends, persist until those ends are accomplished and then disappear, so in the experience of the individual filial credulity serves its time and fulfills its end only to give place to rational beliefs. Not that there is no longer place for faith, but credulity yields to another and higher principle. It is essential developmentally, but also provisional and subordinate to the proper exercise of reason. "I believe it because he said so" becomes merged into "I believe it because it is true." What is temporary has transitive authority, and gives place to the abiding authority of what is rational. Authority in this sense can exist only for a free intelligent being. With the dawn of self-consciousness begins the passage from the authority of force to the authority of truth. With the development of the rational nature, it is the consonance of the truth received on testimony with the truth acquired by direct experience which is warrant for the acceptance of the former. The certitude resting on authority and testimony really rests on a discernment

of their reasonableness. Authority as force is operative as an unconscious power previous to the origin of conscious reasoning; but when reason begins to function, if its functioning is normal, authority as mere coercion is shaken off. But, on the other hand, in so far as this authority is seen to be grounded in truth and right, it is not cast off like the shackles of slavery, but appropriated as the safeguard of immaturity. This is the legitimate place of authority — as a stepping-stone and auxiliary to a rational experience.

CHAPTER VII

REALITY

A NEW interest is springing up in the midst of the materialism of contemporary commerce and science — an interest in values. With the leisure which material prosperity brings, and with the control of the conditions of living which science makes possible, comes the deepening of interest in the appreciative side of life.

§ 24. WHAT IS REALITY?

Philosophy first took the form of a doctrine of Being — Ontology. It asked the question, What is Reality? It gave the answer of the plain man: Reality is objectivity. Reality, to the man of affairs, is what he can count on, the permanent, abiding, independent object of his knowledge. He assumes that the object exists, whether he perceives it or not. He is a realist. He may distinguish two kinds of reality, a mental and a material world, in which case he is also a dualist. Or he may hold that we cannot know the ultimate reality of

Reality is Objectivity.

things, but only appearances, in which case he is an agnostic phenomenalist.

Philosophy then became a theory of faith and feeling — Theology. It asked the question, What is the ultimate seat of authority? It gave the answer of the mystic: Reality is Immediacy. The real is the fullness of the present experience, and this is best expressed by that sense of the binding of the finite to the cosmic personality which is called religion. Feeling rather than thought is the key to the ultimate nature of things. The truth concerning reality is felt rather than known. It is appreciated by direct intuition, not by scientific reflection; by faith, not by sight.

Reality is Immediacy.

Philosophy then took the form of a theory of knowledge — Epistemology. It asked the question, What is knowledge? It gave the answer of the man of science: Reality is Validity. The real is the assured, the genuine, the true. It lies in the meaning, the relations, of things, in the thought by which things are apprehended. Concepts, laws, types, are the most real things in the universe. The real is the universal.

Reality is Validity.

Philosophy is now taking the form of a theory of value — Axiology. It asks the question, What

is the standard of Worth? It gives the answer of the pragmatist: Reality is Value. Reality is relevancy, congruity, adequacy, satisfaction. The real is the expression of concrete individual purpose: it is the needful, the important, the useful, the necessary. The real is the individual, and individuality is determined by interests, motives, desires, utilities. Reality is not simply objective existence, nor immediate feeling, nor even valid truth: it is appreciation of value. When one asks concerning the reality of anything, he means, not what is it apart from all experience, not what is it in itself, but what is its reality relative to some specific need or use. The full reality of a hammer is found only when it is put into action. To ask what reality is can only mean asking what function some particular phase serves under certain conditions and in some specific situation. To ask what Being is, in the abstract, can be answered only in an abstract way — Being is for the sake of Doing, Reality is Experience, Things *are* what they *do*, Facts are Meanings or Values. But it is only the philosopher, the Professor-of-Things-in-General, who is satisfied with this blank reply. Most of us demand more precise answers to the question, What is real?

Reality is Value.

And these answers can only be found by active investigation of the concrete contents of experience, — in a word, by science.

§ 25. REALISM AND IDEALISM

Such may be regarded as the foundation-principle of a pragmatic metaphysics: all categories, including the absolute, including reality, including pragmatism itself, must be taken pragmatically. But there is one thing which, to the realist and absolutist, seems to be given, viz., an objective world. The main attack upon pragmatism by its critics has been upon its supposed subjectivism. What does the pragmatist do with the category of objectivity?

The realist affirms that reality exists independently of our knowledge of it. The idealist asserts that there is no reality apart from some mode of knowledge or experience. If asked, Whose knowledge or experience? he may answer, My individual knowledge or experience. If he means what most people mean by "individual," we say that he is a subjective idealist or solipsist. We regard this as absurd because it contradicts the common-sense view of the world as an external reality. The astronomer does not bring the star

Realism.

into existence when he turns his telescope upon it. When, wandering in the woods, I find a rare orchid, I do not regard this particular flower as coming into existence for the first time when I turn my eyes upon it. I assume that it has been growing for days and weeks, and that if some one else had come there an hour before he too would have found it. When, thrusting my lead pencil into the corolla, two of the stamens stick to the point at each insertion, as they stick to the back of the insect exploring for honey, I do not assume that this is all the momentary creation of my fancy or even of my scientific knowledge as a botanist. I do not *think* these things into existence. I do not create the Niagara gorge when I visit it for the first time. While this sentence in a sense is the product of my thought, I do not create its readers out of the dreams of my fancy. It is conceivable, to be sure, that my thought may have something to do with the existence of the object of my perception. Still, it is not, I believe, the mere product of my thinking, if by thinking is meant what men ordinarily mean by that term. Solipsism accordingly is thrown over as too absurdly contradictory of every-day experience to be accepted for a moment. If

carried out consistently, subjective idealism finally reduces to either a platitude or an absurdity, since it becomes merely a restatement of the problem and not in any sense a solution. We put reality into experience instead of treating it as though it were outside. But we still have the whole universe to explain after we have thus rechristened it. The old problem breaks out anew within the apparent solution.

Idealism.

It must be noted in this criticism of subjective idealism that the common-sense view of the "individual" and of "thinking" has been assumed. But the idealists object to an uncritical acceptance of the plain man's conception of these things. The so-called "individual" of common sense, they tell us, is an unreal abstraction: the real individual is essentially social in character. And "thinking," they add, is not a process which takes place "in my head," with no influence in determining the reality. Thought is not merely a passive but an active process in knowledge: it is itself one stage in the evolution of reality. The star, in a sense, is for the first time brought into existence when the astronomer invents a more powerful lens. "This" star formed no part of the universe of the astronomer or of

experience at large, before it was "discovered." The star is different, if in no other respect, by reason of the fact that it is now being looked at by means of this instrument of greater magnifying power. But, it will be asked, how about a star like Neptune, whose position and size were determined before it was actually seen through the telescope? He might reply that this determination of its position by astronomical mathematics *was its discovery*, just as truly as if it were first seen and then its position determined. It is mediately, instead of immediately, perceived. The ulterior question is: What reality did Neptune have before it was *mathematically* discovered?

Illustration of the Orchid.

Likewise with the orchid. Surely, it might be said by the realist, my finding it among the rocks is not to be interpreted as my putting it there. But, the idealist replies, a savage or child might have stumbled upon it, plucked it, and out of curiosity might have torn the corolla apart, but it would not have been an "orchid" to him. It is orchid just because it is I, a botanist, who find it. *My* being there has something to do with *what it is*. The fact that I am a botanist (with all that this means in human history as

to the evolution of the science of plant life) is just what determines it as an orchid, and not merely a curious and interesting flower. In a similar way, it is a "curious and interesting flower" to the child or savage, but not to the animal. And so on. What we bring to the flower in our perception of it *has* something to do with what it is. It is not sufficient to say that I simply find the orchid to be what it is, that my perception of it has nothing to do with its existence or nature. The flower is a different flower, after I have been there, from what it was before. It is a different flower if the savage or child has handled it. It is different if an insect explores its nectary, or if a sheep sniffs at it. I need not have plucked it or even have touched it, for this to be true. Of course it is different if I tear it apart to study its structure. But it is different likewise if I merely look at it and pass by. If the modern view of the nature of consciousness and the self, and of the relation of thought to action, is correct, then the turning of my eyes toward the object is performing an operation upon it as truly as if I tore it up by the roots. For this act that we call vision, according to current scientific principles, involves the dis-

turbance and readjustment of a dynamic physical system within which the component elements, the plant and the retina, as well as the light-rays and the sun, are all factors. The eye and retina constitute an arc only, in the total circuit of influences which includes the ether-vibrations. The act of vision, whatever else in addition it may be, is a disturbance of this dynamic system in which the flower as well as the eye is a member. I see the orchid only when my organism comes into a certain relation to the ether-vibrations or electro-magnetic disturbances, whatever they are, in the luminous object which physicists in a figure of speech speak of as reflecting the light. Since action in nature is always of the type of interaction, it follows that if the properties of the object make a difference to the vision in the eye, the vision in the eye must in turn make a difference to the qualities in the object.

The orchid is no more truly complete without the eye and the act of vision than it would be if considered apart from the soil, moisture, heat, air, and light which are the conditions of what we call its life. It is not complete as an orchid until it has established all its relationships, and relation to my eye is such a relationship,

which conceivably might alter the very essence of its being. Suppose it catches the eye of a horticulturist, and he transports it to an island in the sea where, by reason of its geographical isolation, it gradually undergoes modification into what would be called a different species. In such a case, relationship to the eye of the horticulturist would have a determining influence in constituting its essential nature as "orchid." It is part of its reality to excite my curiosity, to adorn my conservatory, to become the theme of a poem or the subject of a scientific monograph, as truly as to absorb nourishment from the air and propagate its species through cross-pollination by insects. The reality of a thing is the sum of its functions. The reality of a printing-press lies in the thoughts that are expressed by means of it, as truly as in its mechanism of steel rollers and wheels. The full reality of the pen with which Thomas Jefferson signed the Declaration of Independence cannot be stated apart from that act itself. There is sound philosophic basis for the sentimental values which we attach to the helmet of Joan of Arc, or to a wooden image of Buddha whose features have been worn away by the lips of thousands of devotees.

Is this materialism? By no means. It is just as true that there is an act of vision as that there is an orchid. The reality of each includes both. The reality of the orchid consists partly in the fact of its being seen by an eye, and my reality as a psycho-physical individual consists in part in the fact of cognizing orchids. Not that there are two worlds, one of physical things (such as orchids), and another of states of consciousness (such as visual sensations), but there is one world, one unified process or activity, which, under certain conditions, bifurcates into what we call the-object-orchid and my-visual-experience-of-color. These color-sensations do not exist in and of themselves: they do not exist simply in the mind. There is not a separate realm of mental states parallel to, or concomitant with, certain traits or occurrences in the orchid. Color-sensations occur only under certain specific conditions (of tension and interaction) in an organic circuit which includes both what we call the orchid and what we call the brain: thinking does not take place in a vacuum, we think with our organisms. Relation to my nervous system is one step or condition in constituting the complete orchid, and relation of my nervous system to

The Pragmatic Metaphysics.

the orchid is one stage or factor in constituting my experience of color. The physical thing, in other words, is completed only in the conscious experience of color, and, conversely, sensation becomes a full experience of color only in the orchid. There is no reason for interpreting the reality or experience of my-self-seeing-orchid from the standpoint of the one, any more than from the standpoint of the other factor. Is the reality in the orchid or in my consciousness of color? Is it in the physical or in the mental fact? The full reality is neither, taken in isolation: it is the two in their reciprocal relationship. The reality is the movement of the situation as a whole; it is the interaction of these factors. Doubtless this is the truth of the conceptions of Lotze and Green, that reality is the "system of relations."

Consciousness is not a mere phantom spectator viewing an objective world from the outside. It is not a mere effervescence on the surface of the sea of material things. It is action; it is the process of reality in its phase of reconstruction and evolution. Matter, on the other hand, is not mere brute fact. It is not inert dead substance without life or meaning. It turns itself inside out in

Knowledge and Reality.

what we call consciousness, and in the brain and nervous system becomes the very organ of thought. Our thinking is itself an element in the evolution of the universe; hence the laws of such thinking have relation to the reality of the whole. The mere physical orchid is not the reality, but the-orchid-as-the-object-of-my-knowledge. Nor is my mere idea of orchid the full reality, but my-idea-as-here-specified-under-these-conditions-in-space-and-time. If I dream of a new orchid with a larger corolla and more variegated hue, this fancy of mine is not the full reality. It becomes fully real only as, by breeding and selection of conditions, I help nature in accordance with the laws of the mutation of species, to bring about a variation which shall yield this orchid of my fancy as a new variety living and flourishing in my garden. The "I" and the process of "knowing" are *within* the total process of what we call reality or experience. The problem of "how I know" is accordingly the problem of how a certain activity called knowledge takes place within the total process, not the problem of how one reality (the "I") which knows, sets up an external relation with another reality (the "orchid") which is known. Knowledge, from the start, is

an immanent development. It is a mere verbal confusion which insists that knowledge is a transcending of experience, since experience must in turn be defined in terms of knowledge.

Thinking is Thinging.

In a very real and true sense the idealist may say that my knowing a thing has something to do with the reality of the thing: thinking is thinging. As Professor Dewey has said in his criticism of Lotze, thinking is not merely an external scaffolding which may be torn down when the building has been erected. It is more like the materials which enter into its construction. The building and scaffolding go up together. The scaffolding goes into the building, in this case, as the iron framework of one of our modern sky-scrapers forms a part of its permanent structure. Thinking is not like the hammer and saw which operate upon the material from without, and are reserved to use upon other material, but rather like the beams and trusses which become an integral part of the building. Knowledge may not be treated as an instrument having a nature of its own independent of the data to which it is applied: it is just the ordering and synthesizing of these data. "Since reality must be defined in terms of experience, judgment appears

as the medium through which the consciously effected evolution of reality goes on."

But, the realist will persist, even granting this much, it remains true that there are some phases of the reality of the thing, some aspects of its existence, which do not change because of my presence. My knowledge does not account for the species of which this orchid is a particular instance; it does not account for the geologic evolution of plant-life which has made this particular plant possible; it does not account for the mutual adaptations of the habits of insects and the floral organs which has brought about the unique mechanism of the orchid's corolla. This brings us to the other problem raised at the beginning — the question as to what we mean by "individual" experience and knowledge. The realist will certainly grant, on grounds such as those we have just been considering, that there is some sense in which thinking determines existence, that to some degree at least knowledge does participate in the evolution of reality. The question is whether this is universally true, whether all reality is dependent upon knowledge for its existence, whether all things in all time and space and in all their characters are dependent upon

The Pragmatic Epistemology.

thought or knowledge for the origin and continuance of their being. The answer to this question depends upon our conception of the relation of what we call the individual to this process of thought or knowledge. If thinking is a distinct process operating mechanically upon an external reality, there is no answer except that of the realist. But this is not true: there is an organic relation between the two which explains at once the objectivity of real things and the subjectivity of mental states.

Consciousness and its Object.

The process of consciousness is not confined to the individual. That perceptual process involves changes which extend beyond the organism is an idea made familiar by the physiology and psychology of the senses. In order to have visual perception, processes of chemical change in the nervous system — in the retina and in the brain — are necessary; but equally necessary are the ether vibrations reflected from the luminous object. In like manner air-waves are necessary for the perception of sound, and so forth. I cannot actually transport myself in a moment to an object distant in space, or experience again an event that is past, but there are set up in the nervous system processes which link my being with that

of the distant object or with that of the past event. Because of its obvious dependence upon the state of the sense-organs, perception has come to be associated primarily with the organism, rather than with any part of the spatial or temporal environment: it comes to be regarded as "a process taking place in the self apart from external things." But, as we have seen in an earlier chapter, consciousness is not confined to the limits of the organism. Knowledge, in primitive times, was regarded as taking place by direct contact of the percipient subject with the perceived object. In early Greek theory, minute facsimiles of the objects were supposed to be projected upon the sense-organ. Later, when motion, wholly unlike either the object or the sense-organ, took the place of these corpuscular effluvia, knowledge came to be definitely located in the organism, while the reality remained outside and beyond. It was only a step further to deny the existence of this external reality altogether. But, as we now see, the organism simply represents a point at which the forces of the environment come to a focus and thence irradiate. Consciousness, therefore, cannot be correlated exclusively with the so-called individual organism. It is not something which can be appor-

tioned in parcels to the different members of society. I have consciousness, not *a* consciousness. Experience is primarily activity or process — something going on. Whether it belongs to you or to me is a matter of shifting relationship. It is real only in centres of individual personality, yet maintains its existence only by continual exchange. Experience, as Professor James says, is a joint-stock affair, the universe is a society-of-selves.

§ 26. THE NATURE OF OBJECTIVITY

Reality is in some sense objective. To this all thinkers agree. But there is a difference in the statements of what is meant by objectivity. The naïve view that the objective is something which intrudes itself upon consciousness from without is no longer held. But in giving up this view we are far from clear in stating the doctrine substituted for it. We still cling to objectivity in the sense of compulsion and externality, even when we profess to have rejected these implications. The Kantian view that the objective is that which men are universally and necessarily constrained to think, — quite apart from the special difficulties of his inconsistent world of things-in-themselves, —

The Objective as the External.

requires modification before it can be transformed into a satisfactory explanation. The doctrine of an independent and external reality must be given up, along with the representative theory of knowledge, by a pragmatic philosophy in which reality and experience are regarded as the same fact. Objectivity must have a meaning *within* experience; it is not the presentation of something *to* experience. There can be objectivity only in a functional sense: not brute physical compulsion from without, but organic control from within. Reality is objective, not in the sense of lying outside knowledge, but in the sense of being brought clearly to consciousness in knowledge.

Objectivity as Control.

The principle of control in experience is found in habit and in the image. If one wishes to determine his experience an hour, a day, or a week hence, he must do so by some modification of his habits. The instance of the busy man commissioned by his wife to do an errand on his arrival in town is a case in point. Knowing that he will have a thousand things to divert his attention before he arrives at his office, he devises some sort of an expedient to connect his present activities with the proper reaction when the moment arrives to execute

the commission. He carries his umbrella in the left hand, ties a string around his finger, combs his hair on the wrong side, all to no avail. He provides a cue, and straightway forgets what it is. He may intend to hold his watch in his hand until the errand is carried out, but he does not reckon with deep-seated automatisms: the watch is slipped back into the pocket with no trace left except perhaps an exasperating sense of having forgotten something. One man has happily hit upon a method which, for him, successfully meets the situation. He puts a card in his hat with a memorandum of the errand. When he arrives at the office, if not sooner, on removing his hat, the card falls out and reminds him of his charge. The difference between the successful and unsuccessful methods lies in the objectivity of the controlling element. The umbrella, the string, the watch, are too much a part of the personal habits of the individual; they are too subjective. But the card, through the operation of these very habits, brings about a break in the experience, creates a conflict, and thus calls out the act of attention requisite to arouse the relevant motor-response. By objective, then, is meant, not a world which is external in an existential or ontological sense, but that one experience is deter-

mined in terms of another. That part of my experience is objective which serves as an instrument with which to control another part. It is compulsory, not in the sense that I cannot help having it, but in the sense that it must be taken into account if I undertake to construct a further experience. It is objective in the degree that it presents itself as controlling something else. And this shows why the idea of necessity is so intimately connected with that of objectivity: the objective is that which I *must* control *if* I am to attain my end.

The same principle explains the function of the image in constituting the objective world. It is the check put upon the habitual tendencies, converting them into a conscious process, that determines the objectivity of the situation. The etymology of the term "objective" means just this: an object is an obstacle, it is that which objects. Objectivity means obstruction, inadequacy, interruption. When things go smoothly, or when a coördination has become easy because we have become expert in its performance, we lose the sense of resistance offered by an objective world. It is the conflict among the contents of experience that makes certain of them take on an external

Reconciliation of these two Views.

character. They cease to be immediate ways of living, and become thoughts about reality or distinct objects of perception. It is the "felt unsatisfactoriness of experience," as Professor Stuart says, "which suggests the differentiation of subject and object and the postulation of the latter as an alien 'other,' causing the unsatisfactoriness." We project the world and ascribe to it externality, "just because and in so far as we are baffled by an experience we cannot control." This would seem to be the truth in Mr. Bosanquet's statement that truth is what we are obliged to think. But this is a compulsion from within: it is the necessity of habit. We encounter our own fixed ways of doing things in a situation which calls for a flexible adjustment; the obstruction to the free working of habits juts out in consciousness as an object. There is thus no contradiction between the two statements of the meaning of objectivity, — as obstruction and as control. The sense of compulsion, externality, and arbitrariness is merely the fact of control carried beyond the situation within and for the sake of which it was set up. Objectivity, in the sense of obstruction, is the habit getting in its own way, so to speak, instead of mediating the situation, in its rôle as an image.

In this lies the truth in the common consciousness that touch is the test of the real. An object always expresses the content of an act. If I shut my eyes, the pencil with which I am writing disappears for my vision; but it does not to you, who still have your eyes open. Shut your eyes, and the pencil disappears for you too. But we can still touch it. If we could not, we should agree that the reality of the pencil had vanished. There can be no knowledge of objectivity without the union of motor-reactions with the sensations of special sense. This means that the objectivity of the pencil is due to the reinforcement of the other sensational experiences by the tactile-kinæsthetic imagery which is the fundamental imagery of meaning. If this reinforcement does not take place with perfect smoothness, an image is aroused which mediates between the divorced aspects of subject and object. The positive statement of objectivity is thus to be found in the control which comes through conscious habit — the image, the idea, the standard, the ideal, the law, the theory, the scientific, the philosophic principle. The object is the terminus, the end, that toward which I am moving, that which I am seeking and which I must control if my experience is to be an or-

Touch as the Test of the Real.

dered and systematic whole. It was in this sense that Kant said that the understanding creates the world, and Hegel taught that the laws of thought are the laws of things: the objective world is not revealed *to*, but comes to consciousness *in* experience.

A Functional Distinction.

Science, as M. Binet has pointed out, does not get rid of the subjective element when she fashions instruments of precision. It is true that we rely upon thermometers instead of our subjective estimates of heat; upon balances instead of our estimates of weight; and upon the sphygmographic curve instead of crude observations of the pulse. Yet we read the scales, on such instruments, through the medium of visual sensations, and in the case of astronomical observations the personal equation, in readings of this sort, becomes of vital importance. These instruments correct the subjective error for the purposes for which they are designed (they are objective because they give control adequate for the situation), but they are not objective in any absolute sense, since they in turn may become subjective in the exigencies of more delicate measurements. Just as objectivity signifies obstruction or control according as it is viewed in its negative or in its positive

aspect, so subjectivity signifies, on the negative side, doubt, uncertainty, personal equation, as a disturbing factor in the situation, while, on the positive side, it is represented in the feeling of success and that pleasurable sense of smoothness and ease which control gives.

§ 27. SPACE, TIME, AND CAUSATION

From the point of view of such a pragmatic or functional idealism it is possible to give a meaning to the categories of space, time, and causation which avoids the antinomies in which these concepts are involved when treated from the point of view of a purely realistic or idealistic metaphysics. The nature of space and time is one of the oldest and most perplexing problems of human thought. Are they ultimately real, or only appearances — illusions — due to our limited modes of perception?

Space and Time.

When the baby struggles to its feet by the help of a chair and takes its first tottering steps alone, it has no consciousness of the space category implied. When later the boy knocks a ball across a diamond-shaped field to his playmate, he still lacks any clear consciousness of the space relations involved. It is much later, when he makes his first

acquaintance with metaphysics as a student in college, that he first clearly recognizes what he calls space and time as distinct from other things. Many persons never reach this reflective stage at all. What is here stated for the individual is true also of the race. Men made instinctive and practical use of spatial and temporal relations long before they generalized them in the form of abstract concepts. What shall we say concerning the nature of space and time in the light of this fact that our consciousness of them as clear and distinct object-matter of thought is a relatively late acquisition?

The Objectivist Theory.

Common-sense realism says that space and time were in existence long before man or any other conscious and intelligent creature was there to perceive them, and that our knowledge of them consists merely in a progressively widening and deepening discovery of what they really are and always have been. Space and time, according to this theory, are external realities existing independently of consciousness. They have existed or may exist, if they do not now exist, outside of our thought. This is the objectivist or realistic theory. The plain man regards the extension and duration of objects and events as external and independ-

ent of his knowledge of them. If it is pointed out that certain qualities are dependent upon the perceiving subject, he meets this objection by the time-honored distinction between primary and secondary qualities. Extension, solidity, size, shape, and succession in time are objective properties in the thing, independent of our perception; while color, sound, odor, taste, temperature are subjective qualities due to the state of the percipient's sense organ. The only reason we ascribe a more permanent reality to space and time than to colors, sounds, or odors is that the control of nature has been obtained by man through the science of mechanics rather than through optics or acoustics. Moreover, in stereoscopic vision by an act of attention it is possible to cause the semblance of solidity to appear or disappear at will, while, similarly, in memory we may reverse the time process. And if the accounts given by patients who have had a limb amputated are to be credited, there may be perception of solid space-occupying objects where their existence is known to be impossible, while drowning visions, in which the events of a lifetime are crowded into a moment, illustrate the same principle with reference to time.

According to another theory, space and time

are only as they are *perceived*. They have existence only as the content of consciousness—as the subject-matter of thought, as the instrumentalities of active intelligent beings. Kant says that they are modes of knowledge, forms of perception. Green says they are not substances, but relations. This theory is based upon the argument that a thing is real only as it is real for somebody, that a space and time of which no one knows anything do not exist. What objects in space and events in time may be apart from our cognition of them is a meaningless question, for the only way in which we can think of them is in terms of our knowledge of them. Space and time are in us rather than we in them. This is the subjectivist or idealistic theory.

The Subjectivist Theory.

That space and time are in some sense dependent upon us is evident from the fact that in every act of visual perception or recognitive memory we rise above them. When the scientist gazes through a telescope at the explosion of a star many light-years distant, or studies the elements of a sister planet by means of the spectroscope; when through a microscope he observes organic forms too small to be seen with the naked eye, in a

Arguments for the Subjectivist Theory.

very real sense he is transcending space limitations. When by means of trigonometry and calculus he predicts an eclipse a hundred years hence, or by means of geology and paleontology figures out the action of primitive seas in erosion and rock-formation, in a certain sense he is transcending the limitations of time. All self-consciousness is victory over time and space. The very fact that we have an idea of them proves that we triumph over them. Their control by science and civilization shows their phenomenal character.

But how, one asks, are mathematics and physical science possible if the existence of space and time is a purely subjective affair? It would seem that they must be objective in some sense if we are not to sacrifice the universality and necessity of their laws. Kant recognizes this difficulty and meets it by assuming their *a priori* character as forms of perception. The validity of scientific constructions is guaranteed by the universality and necessity of the forms of our knowledge by which we prescribe to nature the laws which she obeys. The realist readily replies to this, that there were objects and events of a non-conscious and non-intelligent order which sus-

Arguments for the Objectivist Theory.

tained these relations long before the appearance of life and mind and Kant. And he seems to have science on his side when he cites the æons of evolution of inorganic nature which elapsed in this preorganic and preconscious period. He may go further and give us a picture of the whorls of nebulous material, the collision of atoms, the integration of matter and concomitant dissipation of energy, by which the physical world through long ages gradually became the fit habitat for protoplasm. But this conception of the material nature of the universe, and especially the implied conception of the possibility of the independent existence of the physical apart from the mental, is based upon a gigantic assumption — that the description of the universe which physical science has given us in the mechanical theory of nature is true. Mr. Ward has called attention to the hypothetical character of the judgments of exact science, and warns the man of science not to confound the conceptual shorthand of his descriptive statements with the actual phenomenon. The "nature" of the mechanical scientist is a mere abstract scheme — an artifact. His "matter" is not the lump substance of the plain man's experience, but a logical construct. His "space" and "time"

are mathematical abstractions which know nothing of places or dates. "Force" does not signify cause as in every-day life. While the ideas of perfect mechanism and absolute uniformity may be required methodologically, they must not be regarded as giving us a final description of the world in which we actually live. It is a fallacy to ascribe objective existence to these abstractions beyond the purposes for which they were devised.

The truth regarding space and time lies back of the conceptions both of the realist and of the idealist. Both these views presuppose the representative theory of knowledge and fall with the overthrow of that doctrine. Space and time are methodological statements of experience which emerge within and for the sake of the reconstruction of action. They must be functionally stated with reference to the needs of the experience which calls them into being, and with reference to the ends they serve in the mediation of those needs. Space consists of certain stresses and strains, certain tensions in the effort to move. It is well known to psychologists that space is relative to our perceptive organs. Lines which stimulate the margin of the retina have a very different space

The Functional Theory.

value from those which stimulate the centre. Crossed lines seem bent at the centre but straight at the periphery. There is a constant disparity between the space values of the skin at different points. The cavity in a tooth seems very different when seen, when touched with the finger, and when touched by the tongue. While these discrepancies do not ordinarily interfere with our activities in practical life, they often become a great hindrance to accuracy in scientific measurement, and supply the material basis for a functional theory of space.

Analysis of the Space Consciousness.

It is commonly held that there are two kinds of space: tactile-kinæsthetic and retinal. Some psychologists doubt whether the latter is really different in character from the former, i. e. whether there is any extensity of sensation which does not have its origin ultimately in tactile and kinæsthetic imagery. But others hold that there is a visual perception of space independent of the use of the muscles of the eye. In either case the perception of space would be quite different for an animal which had lateral eyes which must be focused successively on an object and an animal like man who can focus both eyes simultaneously on a single object. The space world of the animal would

naturally get its form from the character of the experiences which constitute the content of its struggle for life. Ambidextrality means a larger command over physical objects. The acrobat, the juggler, the sailor, the aeronaut, each has a space world to some extent peculiarly his own. If I lay hold of a needle, a cane, a hatchet, a knife, a violin-bow, the throttle of a locomotive, I thereby enlarge my control and thus my space world. The steam-hammer, the sewing-machine, the reaper are but extensions of the hand. The locomotive, bicycle, ship, automobile, aeroplane are extensions of the leg or wing. The microscope and telescope are refinements of the eye. The telephone, telegraph, and Marconigram are refinements of the ear. The doctrine of the subjectivity of space in one sense is true. My space is mine and not my neighbor's. The same is true of time. There are as many spaces and times as there are individual centres of consciousness and intelligence. But this merely means that space and time, like all things else in a growing universe, are most real where they are individualized, i. e. are most real when viewed in process of organization and reorganization. They are not subjective in the sense that they are psychical or inner, as opposed to physical

or outer: they are not subjective in an ontological sense. They are subjective in the functional sense: they are methods by which action is reconstructed in individual consciousness. Method as such is always conscious and individual; it is habit undergoing reconstruction at the point of need in the adaptation. Space and time at first are simply instinctive modes of dealing with certain types of situation. As these direct modes of reaction become explicit in reflective consciousness as methods, they come to be known as ideas, concepts, categories. But even then they are but phases of the machinery of that tension by which different aspects of an experience are held apart until a readjustment can be made.

Illustration of the Man and the Brook.

Suppose a man about to leap across a brook. The man is here. The bank is over there. It is so far away, so many feet distant. (Note the figure: it is so many *feet*, i. e. so many steps or jumps away.) As he measures the interval with his eye and strains his muscles in preparation for a spring, he experiments ideally. He anticipates the jump in idea. As Professor Stout says, he crosses the bridge before he comes to it. The distinctions of here and there, of now and then, are ultimately in terms of some vital act, however it

may be masked by inhibition or overlaid by secondary reactions. Up and down, right and left, fore and aft get their significance from their relation to the movements of the organism as a centre. Space and time are statements of the means, the method, of action. They are phases of the conscious transition from one experience to another. They are instrumental to the act. The moment the man begins to jump, these distinctions become nothing to him except as they define the point where he expects to alight.

The space and time worlds have been built up together. Succession and simultaneousness are to a certain extent correlative conceptions, since in order to apprehend in detail the elements in a simultaneous presentation it is necessary to perceive them in succession. The language descriptive of time relations is often borrowed from space and that of space from time. But there is this difference between them, that while the parts of space appear to be an aggregate, the parts of time form a series. Space has been called the present of time and time the elsewhere of space. Hearing is generally regarded as the time sense, but the tactile and kinæsthetic sensations play an im-

The Time Consciousness.

portant part in the perception of rhythm which lies at the foundation of the time consciousness. Accent and metre in music and poetry furnish an endless field for study. Time originally must have grown out of the attempt to measure distance in terms of rhythmical bodily movements, such as paces or leaps. To say that a tree is so many paces away means that it would require the performance of so many successive acts to cover the distance between you and the tree. The unit of time measurement is primarily some activity of the organism. But in order that such a time series should be built up, it would be necessary to remember the earlier part of the series until the end should be reached. Memory, thus, is an essential condition. Professor Titchener says that time begins with the distinction of a "not yet" and a "no more" consciousness. Past and future are ideal constructions within the Now: they are the Now pulled out at both ends. Or the Now may be regarded as a telescoping of past and future Thens. Activity is the real measure. Time is measured, not so much by years, days, hours, and minutes, as by meal-times, heart-throbs, and anticipated pleasures or pains.

The empirical space of my perception is

bounded by the horizon; empirical time is bounded by memory. The Here is sandwiched between two Theres; the Now, between a past and future Then. Mathematical or conceptual space and time, on the other hand, are not concrete aggregates, but bare relations. The difference is in what is ignored. The mathematical conception lays exclusive emphasis upon the continuity aspect, while in every-day life this is subordinated to the particularity of the discrete objects and events which constitute their content. Antinomies result from the attempt to conceive empty space and time apart from the concrete experience where they have meaning. We cannot perceive empty space and time, but only objects and events. Pure space and time are artifacts like the "average child" or the "economic man." They are valuable devices for enabling science to formulate its problems and to facilitate its results, but the continuity, homogeneity, and relativity of space and time can have only a functional meaning.

Continuity and Discreteness.

One of the age-old problems of science has grown out of the false isolation of consciousness and time. On the one hand, consciousness is regarded as a product of evolution, an event or stage in the temporal process. On the other side,

there is a sense in which the very existence of the external world is conditioned by consciousness. An object, or a universe, that appears to no one, that is not an object of knowledge to some intelligent being, is non-existent. Consciousness seems to condition the very possibility of science. How, then, can consciousness be a relatively late product of biological evolution? If time (including the historical development of science) has been built up in consciousness, how can consciousness be an evolution in time?

The Paradox of Time and Consciousness.

The solution of this apparent paradox lies in seeing that consciousness, taken apart from the organism which is conscious, is not an entity or thing; it is not even a process—it is simply logical meaning or significance. Consciousness taken in abstraction from body, like function conceived apart from the organ or structure which functions, signifies no more than a sum of relations or meanings. The biologist does not hypostasize function and then conceive it to act causally upon structure. Some biologists *have* attempted to conceive of the function as in some sense preceding structure. But this notion has been called, what it certainly must remain, when stated in this form, the bio-

The Solution.

logical paradox. Its paradoxical nature arises from a false statement of the problem. It is as false to conceive of function as preceding structure as to conceive of structure as preceding function. By function is meant orderly continuous activity with reference to an end, and this activity consists of changes in structure. Hence the only significance of function over and above mere structure must lie in the end subserved, in the meaning of these changes, in the significance of this order and continuity. The essential idea in function lies in the use, value, or utility of the structure for some purpose. The enigma reduces, therefore, to a mere verbal fallacy. After by definition abstracting consciousness from matter, there still cling to our psychological statements traces of our conceptions of material objects. There is no actual consciousness apart from an organism. But in our thinking and speaking concerning it we split apart the two aspects for purposes of discussion. They are one, but in the very act of saying it we make them two. Any thinking or speaking is a polarizing into two aspects in thought of what is an undivided unity for action. This, of course, is a methodological, not an ontological dualism, and hence is paradoxical only for him who for-

gets its origin. If this important point is kept in mind, the apparent contradiction between time and consciousness is cleared up. Consciousness is in time when it is regarded as the functioning of the nervous system. Time is in consciousness just as truly, however, when consciousness is regarded as the bare significance or meaning abstracted from its existential basis, since time, from this standpoint, is just one meaning among others. It is both an existence and a meaning: an existence when experience is viewed as the condition of getting further experience, a meaning when experience is taken relatively in and for itself as an already achieved value.

The Pragmatic Meaning of Space and Time.

Negatively, space and time stand for obstruction and resistance. They are the signs of relative inadequacy in experience. An object is an obstacle; its spatial character emerges in the attempt to define and control it. The demand for time, Professor Dewey says, is the result of the lack of unity; it is a yearning for the next moment of experience. Space means opportunity, elbow-room, scope for movement. Time means capacity for continued realization of satisfactions, the possibility of progress. Space is the simultaneity aspect, time the succession aspect, of the tension

in which the consciousness of a world is built up. Objectivity means the ability to state experience in spatial, temporal, and causal terms in such a way as to give control of further experience. We state experience as process, i. e. temporally, spatially, and causally, only when it is not satisfactory. When it is fully adequate as in the case of instinct, intuition, habit, æsthetic absorption, these distinctions fade away or become irrelevant. The attempt to *state* it necessarily gives us the fragmentary and piecemeal view. The world of description is inevitably a finite, temporal, spatial, causal world. It is the world of appreciation which is infinite, eternal, and absolute. Experience is temporal as long as it is a process of search or strife. It is eternal in the moments of relative achievement and consummation. All experience, in reality, is both, but never either completely. To be merely temporal would mean a mere succession in consciousness with no consciousness of succession. To be quite utterly absolute or eternal, would telescope time into a mathematical point which would be the same as no time at all. Time and eternity, temporal process and timeless appreciation, are opposite poles within which the concrete content of experience revolves.

The popular idea of cause is that of practical agency. It recognizes only productive or efficient activity; causation is creation. Cause and effect are interpreted ultimately in terms of personal will and voluntary action; a caused act is an intended act. Since in his own life the naïve individual both passively suffers and actively produces many things in an apparently capricious way, he recognizes similar arbitrary causes and effects in nature about him. Cause seems even to have had an ethical significance, the same word being used originally for blame, fault, responsibility. The cause was the thing that was held accountable, the thing one had to reckon with, and which, therefore, it was desirable to control. On this account it was the striking event which was singled out as the cause or effect. Some one antecedent or consequent was taken as standing for the rest. If a meteor or an eclipse occurs during the same season with a pestilence, the one comes to be regarded as the cause of the other. There is a tendency, also, to put an interval between the cause and the effect, some prominent event being selected as *the* cause or as *the* effect. In the case of a man who is shot, the bullet or the pulling of the

The Popular Idea of Causation.

trigger would be regarded as the cause and the death of the man as the effect. The action of the cause, furthermore, is regarded as spontaneous and free, the effect following mechanically upon it. It is conceived after the analogy of the human will with its apparently unconditioned action.

The scientific idea of causation is only a more critical statement of the practical idea of efficacy. The idea of unconditioned action is given up, along with the anthropomorphic conception. Its personal character is either denied outright or pushed back to an assumed beginning of things as the creative fiat of an omnipotent and omniscient being. As regards sequence, cause and effect, as Mr. Venn says, are screwed up closer together than in the popular conception; the cause is viewed as the sum of the conditions, and the effect as the sum of the results. Mill defines a cause as "all the antecedents to an event." The state of the pistol and the powder, the purpose of the man who fired it, as well as the state of the organism of the man who was shot, are all parts of the cause; while the disturbance of the atmosphere, the sound of the report, and a host of other happenings, are part of the effect.

The Scientific Idea of Causation.

Scientific method seeks to show the precise proximate events, and in so doing is driven to enumerate the totality of the conditions on the side both of the cause and of the effect. Still again, while the plain man is apt to give preference to the changing element in a situation, the man of science recognizes the permanent factors as of equal importance. The reason the variable element is pounced upon as the cause by the man of affairs is its practical significance. But to gain an end in science one must discount the variables by controlling them. The man of science sees that the variable is no more the cause of the effect than are the constant elements in the situation; it is simply more conspicuous because of its more immediate emotional or practical import. He therefore seeks to reduce them all to a uniform and homogeneous system, in order that he may see clearly the relation of each factor to all the rest. The popular idea is thus rendered more precise, first, by the more complete enumeration of the conditions, and second, by the closeness of the sequence of the determining cause and the resulting effect.

The present state of the scientific doctrine of causation is far from being a consistent one. It

embraces the ideas of sequence, uniformity, necessity, and reciprocity, with no clear analysis of the mutual implications of these categories. The confusion of law with cause, uniformity with productivity, has been one of the most prevalent fallacies in the history of science. Hume showed us that we cannot argue from sequence to necessary connection. The idea of necessity or constraint is not derivable from the mere fact of invariable succession. Men have come to see that the laws of science are not forces, that the uniformity of nature does not account for anything in the sense of efficient causation: these are but shorthand descriptive methods of stating the fact of the repetition of like phenomena under like conditions. Science treats of conditions rather than of causes. She confines her inquiry to proximate, phenomenal, or natural causes, no longer seeking to state the nature of the ultimate, noumenal, or metaphysical ground or reason for the universe. An effect is regarded as produced by a number of concurrent causes, all indispensable, but varying in importance when regarded from different points of view. When one is emphasized as of commanding importance and for that reason called *the* cause,

Inconsistencies of the Scientific Conception.

the others are still recognized as concomitant or occasioning causes.

In this idea lie both the truth and the defect of the scientific conception of cause and effect.

The Metaphysical Idea of Causation.

The truth is found in the idea of the universe as a system. The result of the closer analysis of antecedents and consequents has been the discovery of such an amazing plurality of causes and multiplicity of effects as to drive men of science to the conclusion that the complete causal explanation of any single event would involve all the rest of the universe. The complete ground of any one thing could be found only in the entire system in which it is an element or member. There is just one immense fact with immanent distribution and redistribution of parts. Causation thus becomes a simple equation of the total sum of conditions with the total sum of results; the whole universe, in which the bullet is but a single condition, equals the whole universe in which the death of the man is but a part of the result. Causation means identity, interconvertibility, reciprocity. All action is interaction. Since the idea of creation out of nothing is rejected, and sequence is reduced to coexistence, causal explanation as employed in the his-

torical sciences gives place to an equational form of statement implying mutual determination: given such and such conditions and such and such results follow. If such and such is given, then such and such already is. The upshot is that scientists have come to hold that the goal of true science is to state its laws in the form of mathematical equations, and the ideas of conservation and convertibility are substituted for sequence and evolution.

Defects of Naturalism.

But is not this paying too high a price for the values received? In reducing all the facts of nature to terms of a perfectly homogeneous and continuous series, physical science has neglected to remember that in the world of our actual experience no two objects or events are ever precisely alike. Each fresh individual thing, whether it be this new-blown rose, this child's happy voice, or this rending pain, is a unique phenomenon. None has ever occurred or ever will occur just like it. The uniformity, invariability, identity, which science finds in the universe is an abstraction which has truth only when used as a logical tool for dealing economically and comprehensively with the infinite variety of details which constitutes the actual world. Causation is mere

identity, integration, no more than it is mere diversity or differentiation; it is both at once. If you resolve causality into the mere relation of identity, you eliminate the very thing to be explained — the difference of the effect from its cause. When science results in naturalism and materialism she falls a victim to the dangerous machinery of her own magnificent technique. The problem of the relation of mind and matter is a test case. The popular consciousness had no difficulty in conceiving either body or mind as cause or as effect, according to the exigencies of the situation. But when the relations between brain and consciousness came to be more closely examined by scientific methods, theory was driven to a doctrine of psychophysical parallelism. This, in principle, is an identity doctrine, while at the same time it seeks (inconsistently) to retain the distinction between cause and effect. When the ultimate identity of the two worlds is emphasized, it takes a monistic form, materialistic or spiritualistic, according to whether the stress is put upon the objective or the subjective aspect. When the emphasis is placed upon the disparateness and incomparability of the two realms, the causal relation is either pushed back to the absolute beginning of things where

a harmony is miraculously preëstablished by the decree of God, or it remains an unexplained mystery. To such lengths has scientific theory been forced by the demands of its rigid separation of the world of thoughts and the world of things. One has only to follow the history of the doctrine of psychical causality — an attempt to rehabilitate physical causation in psychological terms — to realize the need of a complete reconstruction of concepts in this field.

Now what does this analysis suggest except the wholly functional character of the distinction between cause and effect: as the idea of efficient causation or productive agency is reducible to the idea of reciprocity or system, so the idea of transmissive or material causation (identity) is reducible to creative or efficient causation — evolution. Change does not explain itself, and change is the most fundamental fact of the actual world, from a study of which the man of science has arrived at his principle of identity and of nature as a closed system. Necessary causation, as Professor Dewey has shown, is simply teleology read backwards. The burning of the match and the lighting of the gas are ordinarily regarded as successive. But as long as the burning of the

The Pragmatic Theory of Cause and Effect.

match is really antecedent, it is not cause; it must enter into and actually become the effect, in order to be cause. The cause is not itself fully cause until the effect is complete. The total system which includes both is essential to the adequate statement of either as such.

Illustration of a Conflagration.

Professor Dewey illustrates this as follows. Let us suppose a conflagration. This presents itself to us as a unitary experience. The house, water, fire-engines, hose, men, screams, might be individualities under other circumstances, but here they are parts or elements in a total situation. Suppose you are the person whose house is being consumed, or suppose you are the fireman. As long as you are engaged in this situation, your reflections and judgments go on *within* the conflagration-experience. But suppose, as the fire dies down and the climax of the excitement passes, that you were to ask: "How did this fire originate? Why was there a fire?" Then your thinking passes relatively *without* the situation into another attitude. The conflagration is no longer an immediate total experience, but an element or factor in a larger whole. It is taken as a given effect for which you are seeking the cause. In another instance it might be taken as

the given cause for which you were seeking the possible or probable effects.

In the objective world there are no limits to this conflagration; it does not begin or end at any particular place. It does not stop with this house, this street, this city, the solar system. In physical science the facts of the universe form a continuum, and this phenomenon of combustion here disturbs the dynamic system of the cosmos to its remotest atom. It is my interest which leads me to take something as an effect, and makes me curious to find out what might have been its cause, the reasons for its occurring just as it did. To take the conflagration as a result means to treat it as incomplete, as partial. To a person engaged within the conflagration it is a whole. But the moment he takes it as an effect he assumes that it is incomplete. He does not understand how it happened. He has the terminal stage of the event but not the initial stage. He wants to know the whole system to which this belongs: "Was it an incendiary, or a defective flue? Did the fire catch from the hearth, or how did it originate?"

Here is the apparent antinomy of cause and effect. Viewed in one aspect, the conflagration

is a concrete individual experience, — an effect, — but an unsatisfactory because partial experience, and I am seeking for another concrete individual experience, say the incendiary or the defective flue, as the cause. In another aspect, however, these two experiences are not discrete but continuous; the defective flue and the burning house are simply earlier and later stages of one fact — and, if one cares to, he may go on infinitely into the past and future in the statement of the initial stages or conditions and the terminal stages or results of this conflagration. The first inning of a baseball game comes before the last inning, but it is not regarded as its cause. The defective flue is not the cause of the fire except in a popular sense. It might lie forever on the sands of the Sahara or in the bottom of the sea without being the cause of a conflagration. It is its presence in this particular situation, coöperating with these other conditions — just next to that wooden beam, with an overheated furnace, when the janitor was away, etc. — which makes it, not *the* cause, but the occasion or exciting cause, the keystone in the causal arch, so to speak.

To take anything as an effect, in other words, is to take it as an end. To take anything as a

cause is to take it as a condition or means. The whole purport of the conception of means and ends is that we have a certain experience and we wish to get another, and the aim, as an end, is set off as distinct from the means that are at hand to realize it. To use anything as a means implies a series of graded steps by which we can pass from the means to the end. If we take the point of view either of the continuity or of the discreteness of the situation, alone, we get neither cause nor effect. The point of view of discreteness, if taken absolutely, would give two different and wholly unrelated experiences. If we take continuity absolutely, we get just one continuous unbroken whole, a distinctionless identity. The solution of the antinomy lies in seeing that the standpoint of continuity is the intellectual point of view, and is instrumental to the standpoint of discreteness, the practical point of view, and that the two can no more be divorced than thought and action or theory and practice. The intellectual grows out of the practical and finds its significance in the redetermination of the practical.

CHAPTER VIII

EVOLUTION AND THE ABSOLUTE

§ 28. CONSERVATION VERSUS EVOLUTION

Two principles of modern science — conservation and evolution — seem to come into fatal conflict. It appears as if we were driven to accept one of two alternatives: the universe is either a closed system or a progressive growth. Yet either view taken by itself involves us in grave difficulties.

Conservation or Identity.

The arguments for the former alternative are found in the facts and law of conservation of energy, upon which is based the mechanical theory of nature. The arguments for the latter are found in the facts and law of growth, which seem to support a teleological interpretation of the universe. On the one side, we are compelled to conceive of the world as a completed whole and to regard all apparent evolution as simply redistribution of parts with no increase in amount. This is the doctrine of the conservation and convertibility of energy. There is nothing new under the sun. There is nothing

quantitatively new because there can be no addition to the sum of existence. And there can be nothing qualitatively new because all differences of quality ultimately reduce to differences of degree or quantity.

On the other side, we have the doctrine of evolution. It appears as if things *came to be* what they are. It seems as if at first they were not and later came into existence by a process of development. Growth from childhood to maturity seems to be a process of becoming, in which something which was not enters into being, in which something comes out of nothing. If evolution is not to mean mere universal undulation — a cosmic game of hide-and-seek — then in progress there must always be an increment, a reinforcement. But when we seek to generalize this idea for the universe at large in a doctrine of absolute evolution or creation *ex nihilo*, it is rejected as irrational and absurd. The whole history of science has been a search for the causes of things, and to suppose that some things are uncaused, produced out of the void as by magic, is to make science either a tragedy or a farce.

Evolution or Sequence.

This is the problem of essence versus origin, of being versus becoming, — a problem which

has divided schools of philosophy from the beginning of reflective thought. The "conception of the eternity of the forms of things," says Professor Royce, "is, historically considered, by far the most significant opponent that the philosophical doctrine of evolution has had or ever can have." Is reality eternal, complete, perfect, and the appearance of change and evolution merely illusory, or is it what on the surface it appears to be, a dynamic progressive achievement in which reality literally comes into being for the first time from moment to moment by the voluntary act of intelligent and free agents? Is it a block universe with all its events predetermined from the first, or is it an indeterminate equation some of whose elements are conditioned upon facts not yet come to light? Here is the dilemma. We cannot believe that something has evolved out of nothing. This strikes at the rationality of the universe; it contradicts the best established principles of science. But to regard the universe as a completed system strikes at its morality, because it destroys all possibility of progress, initiative, freedom, and responsibility.

The Antinomy.

The problem of the absolute origin of anything is one of the time-honored puzzles of meta-

physics. We, of course, see beginnings and endings of events or processes, in a relative sense. But to conceive of a time in the past when nothing whatever existed, or of a time in the future when nothing will exist, seems not only beyond our powers of thought but actually self-contradictory. It seems to follow that because something is, something always has been and always will be. Apparently the conceptions of being and non-being are mutually incompatible.

"Nature" versus "Origin."

The question of the origin of a thing, as Professor Baldwin has shown, cannot be considered apart from the question of the nature of the thing. "The nature — the 'what' — of a thing is given in, and only in, its behavior, i. e. in the process or changes through which it passes." A thing *is* what it *does*. Its reality is exhausted in the statement of its functions. Now this behavior is not a fixed, finished-up event. It is a continuous, progressive process. "A mere lump would remain a lump, and never become a thing, if, to adhere to our phenomenal way of speaking, it did not pass through a series of changes. A thing must have a career." Its full reality does not appear in a mere cross-section; it comes out only in a longitudinal view of the process. "The strict

adherence to the definition of a thing in terms of behavior, therefore, would seem to require that we should wait for the changes to go through a part at least of their progress — for the career to be unrolled, at least in part. Immediate description gives, so far as it is truly immediate, no science, no real thing with any richness of content; it gives merely the snap-object of the child." The "what," therefore, can be stated only in terms of the "how," the existence only in terms of the growth of the thing. "Any 'what' whatever is in large measure made up of judgments based upon experiences of the 'how.'" Statements of the existence of the thing are ultimately simply abbreviated statements of the method of its operation.

The question arises then, "How far back in the career of the thing is it necessary to go to call the halting-place 'origin'?" "How much of a thing's career belongs to its origin?" It is clear "that origin is always a reading of part of the very career which is the content of the concept of the nature of the thing." How far back must we unroll this record of the behavior of the thing to get the origin of the thing? So "the question before us seems to resolve itself into the task of finding somewhere in the thing's history

a line which divides its career up to the present into two parts — one properly described as origin, and the other not. Now on the view of the naturalist pure and simple there can be no such line. For the attempt to construe a thing entirely in terms of history, entirely in the retrospective categories, would make it impossible for him to stop at any point and say, 'This far back is nature and further back is origin'; for at that point the question might be asked of him, 'What is the content of the career which describes the thing's origin?' — and he would have to reply in exactly the same way that he did if we asked him the same question regarding the thing's nature at that point. He would have to say that the origin of the thing observed later was described by career up to that point; and is not that exactly the reply he would give if we asked him what the thing was which then was? So to get any reply as to the question of the origin of one thing different from that to the question of nature at an earlier stage, he would have to go still further back. But this would only repeat his difficulty. So he never would be able to distinguish between origin and nature except as different terms for describing different sections of one continuous series of aspects of behavior."

§ 29. THE QUESTION OF ABSOLUTE ORIGIN

In other words, the answer to the question as to what we mean by origin is that this point is determined wholly by the need or interest or purpose of the investigation. Origin is not ultimate. There is no such thing as an absolute beginning of anything. The origin of a thing is always its beginning with reference to a certain end. The end and the beginning cannot be separated except methodologically. They are complementary concepts. Origins take place continually, and ends or values are achieved continually. As Professor Baldwin says: "The only way to treat the problem of ultimate origin is not to ask it, as an isolated problem, but to reach a category which intrinsically resolves the opposition between the two phases of reality." Or, as Mr. Hobhouse says: "No event begins or ends; but a process goes on which passes gradually from one phase into another. We ticket prominent or clearly distinct phases with separate names, and speak of them as different events; but we must remember that, though in one sense they are different, there is yet no barrier." Or as he says in another place: "Reality is or

Origin is not Absolute.

includes a time process. Now if we take any time process and consider its beginning, we are dealing with a partial fact, and for every partial fact thought demands an explanation which will connect it with reality as a whole. For the cause of the origin of a process, then, we may look in two directions, to its results or to its antecedents. If we look to the latter, we are clearly going outside the process. But if the process is one in which the whole nature of our ultimate system is to be expressed, we cannot go outside it without denying the claim of our system to be complete. We are therefore thrown forward towards the results of this system. But neither can the purpose achieved by the process stand alone, for the necessity of the process must also be made plain. If an unconditional purpose were the secret of the universe, there could be no explanation of the means, the process, and the effort through which the purpose is realized. From the conception of purpose, then, we are again thrown back on origins, just as these throw us forward to their purpose. We have, in short, to conceive a single principle not realized in full in any one phase, but pervading the whole world process. In this principle, the possible and the actual in a sense come together, for what it is to

be is an integral condition that goes to make the world what it is. We cannot take any phase of reality as an absolute starting-point and regard it as determining everything that follows upon it mechanically, or everything that precedes it teleologically. If we conceive any process as making up the life of an intelligible world-whole, we must conceive its origin and issue as dependent on and implying one another. That is, we must conceive it as determined organically."

Unity is not Absolute.

It is impossible to think of the universe as a whole in an absolute sense. We use the words, and they have a defensible meaning; but they do not mean what they seem to in discussions of this sort. When we speak of the totality of the universe, the totality of which we speak is such only from the particular point of view implied in the discussion. The very fact that we so *conceive* it is sufficient evidence that it *is* not limited in an absolute sense, for in thus conceiving it we have ourselves in some sense transcended it. The concept of unity as applied to the universe has therefore only a relative truth. It is true only in the light of the correlative concept of continuity. That is, the distinction contained in the dilemma of essence versus origin is a functional one. One horn of

the dilemma expresses a truth, the truth of the unity of the universe as a system, a truth which, however, is true only when interpreted in relation to the other horn of the dilemma, which emphasizes the self-transcending character of this same system. Reality is a state only when viewed relatively as the culmination of a past process or as the source of a future one, while the essence of things is got by telescoping what they have been and what they are to be into a relatively timeless present value.

Thus viewed, the antithesis of conservation and evolution disappears. According to the conservation doctrine, there is no addition to the sum of existence. The only novel feature is the new relation in which the existent stands. By redistribution of forces there is an evolution of new meanings with no addition to the substance or reality. But, one may say, a new meaning adds something to the sum total of the universe. And thus the doctrine of conservation seems to be infringed. The reply is that the *meaning here becomes an existence* just by reason of the fact that it is treated in this instance as *a* meaning taking its place along with other meanings in a system. Meaning as meaning is not an in-

The Solution of the Antinomy.

crement, for it is universal. It is not the last member of a series; it is the whole system reconstituted. It is inevitable that meaning shall be taken as existence in this sense, but thus viewed there is no real contradiction between the doctrines of conservation and evolution. Each concept has significance only in relation to the other. The evolution of meaning is the condition of the conservation of existence, just as truly as the conservation of existence is the condition of its having meaning. When science wishes to cure a disease, she assumes the uniformity of the system within which she is working — the conservation of its existence, its matter or energy. It assumes that enteric epithelium performed the same function a thousand years ago that it does to-day. It goes back into phyletic history and traces the evolution of the vermiform appendix for the sake of controlling the diseased state of that organ in the present case. The historical or evolutionary principle presupposes conservation in its genetic statement, while in turn the conservation idea would remain barren and abstract were it not for the element of change which is introduced by evolution. It follows that the distinction of the closed versus the open system is not a fixed

one, but one set up within reality or experience; and therefore it is illegitimate to attempt to interpret the totality of the universe exclusively in terms of either one of the pair of abstractions.

§ 30. EVOLUTIONISM

The Mechanical Theory of Evolution.

An examination from this point of view of the two opposed types of philosophy known as evolutionism and absolutism will disclose the real interdependence of the half-truths for which they respectively stand. Evolutionism, as embodied in Spencer's philosophy, seeks to explain the complex in terms of the simple, what is in terms of what no longer exists. It derives the definite from the indefinite, the coherent from the incoherent, the heterogeneous from the homogeneous. But evolution thus interpreted conducts us back ultimately through less and less complex modes of existence until we come to a hypothetical beginning which must be simply zero. Viewed in this way, it would appear that the marvelous variety of the universe as we know it to-day has developed out of primitive nebulous haze or finally from an absolutely simple beginning which is in no way different from a blank nothing. At the absolute beginning of things,

from the point of view of a purely mechanical theory of evolution, being equals nothing. To this result we are forced if we look alone on that aspect in which it appears that the later, more highly differentiated, have unfolded from the earlier less complex types of being.

Such we might suppose would have been the method by which Spencer arrived at his conclusion that the ultimate nature of the universe is essentially unknowable. But, as a matter of fact, he develops an entirely different line of argument, completely overlooking this most natural basis for the doctrine. He grounds his philosophy of the Unknowable on the epistemological theory of the relativity of knowledge. And instead of recognizing the nihilistic implication of his mechanical conception of evolution, he inconsistently postulates the instability of the homogeneous. That is, he postulates diversity in the primal unity with which he starts the evolutionary process, whereas, on his own presuppositions, he is logically entitled only to an abstract and therefore empty unity. It is not so strange, therefore, that he finally takes out of the bag what he originally put in.

But apart from the inconsistencies in Spencer's particular system, the mechanical theory

of evolution is indefensible on general grounds, whenever in the form of an agnostic naturalism it purports to give a philosophy of nature. It is impossible to state the theory in an intelligible form without introducing teleological considerations. The scientist with positivist leanings glibly says that his business is to get at the facts. But how does he get the facts? By causal analysis, he will reply. But he here inconsistently introduces the teleological point of view. For, as we have seen, the only way to find out what *is*, is to find out *how it came to be* and what it *will do*. The only strictly mechanical statements of law are in the form of equations; and the philosophical scientist will himself admit that these are but conceptual shorthand for serial operations which are shot through and through with purpose.

The only antidote to a mechanical evolutionism is a deeper, more organic interpretation of evolution itself. Evolution is ordinarily conceived as a movement between fixed limits, a progress from a definite starting-point to a definite goal. But in a true conception the starting-point and the goal are not fixed. The ideas of beginning and end are wholly relative to the process from

The Teleological Theory of Evolution.

which they are abstractions. We must interpret the faintest beginnings of growth in terms of the ripest result as well as the later stages in terms of the earlier. I have not explained anything by simply tracing its connections with preëxisting entities — by an account of its genesis. I have not fully explained it until I have also disclosed its use, its function, in the present and in that career yet to be unrolled of which Mr. Baldwin speaks. If the former be called the mechanical explanation, it must be supplemented by the latter, the teleological. Strictly speaking, these cannot be separated. Genesis cannot be explained except by reference to function, and function can be understood only in the light of genesis. "The ultimate interpretation even of the lowest existence," says Dr. Caird, "cannot be given except on principles which are adequate to explain the highest." "The true meaning of the lowest phases of evolution can be found only in the highest, just as the meaning of the acorn can be found only in the full-grown oak. . . . The first step will not be fully understood until the last is taken, which will never be." Why there should be reality and progress at all is doubtless a mystery. But meanwhile the truth seems to be that

both empiricism and absolutism are in a sense true.

§ 31. ABSOLUTISM

The essential feature of absolutism, as embodied, for example, in the systems of Mr. Bradley and Professor Royce, consists in its doctrine of an eternal or timeless reality. Both these writers rightly maintain that reality is experience, but they insist that all the diversity of the universe as we know it is taken up into an absolute experience. They say much that is suggestive and inspiring; but the difficulty with both theories (and they are the best exponents of this point of view) is that they seem to think of the absolute reality as all-inclusive and all-exhaustive in the sense of being already completed, — there once for all wound up or frozen into a solid block of perfection.

The Finished Absolute.

The greatest difficulty of the absolutist is how to get variety, change, and finite values into his eternal reality without infecting it with their phenomenal character. How, if the Absolute is such as he describes it, can there be any finite at all? Yet he insists that all finite appearances somehow belong to reality, all our fragmentary experiences are taken up into the eternal con-

sciousness. The problem is, How can the Absolute have change belonging to it as a genuine part of its nature and yet not itself be subject to change? It never seems to have occurred to him to begin at the other end, and say that change in some way must have an absolute significance, since it is so fundamental a character of our experience.

Why should we deny to the Absolute the character which by common consent it is most disparaging to the relative and finite being to lack? Why should we attribute to ultimate reality the static character of completedness, when we regard this as indicative of death and decay in our own experience? Who of us would wish for an experience, no matter how large or how exhaustive, provided that this meant the end of all capacity for growth, expansion, — evolution of the new? We would not take the Absolute for a gift if it meant this, — if it meant that there would be nothing more to do, nothing more to feel, nothing more to think! What gives zest and interest and spontaneity to life is its eternal newness. Each fresh experience is a genuine evolution of some new reality. Each moment is unique. Nothing just like it has ever occurred in the universe before. This

is how we wish to think of our own experience. Why should we withhold this character from the infinite and the eternal, from the universal absolute experience? Why should what to us is the sign of emptiness and the quiet of the grave be supposed to be the highest tribute we can pay to the Supreme Being? Are we not much nearer the truth when with Lessing we prefer the "search for the truth" to the "truth" itself, when we think of the Absolute rather in terms of a dynamic becoming than as static being? To be sure, it is not much of a search if it is a perpetual seeking and never finding; if it is an eternal becoming without becoming something positive and definite. But to find it once for all, to become it and all there is of it at last completely, — what a hell that would make of heaven!

We are not maintaining, however, that the Absolute is simply change, that there is no truth whatever in absolutism. On the contrary, we distinctly believe in the Absolute, — in a concrete or functional absolute. The Absolute, we hold, must be in, not beyond our experience. We are not arguing that the Absolute is imperfect. We are simply arguing against a static idea of perfection. Per-

The Functional Absolute.

fection means, not final consummation, but inexhaustible capacity for development. The Absolute is perfect in the sense of embodying infinite potentialities, potencies, promises for the future. "Be ye perfect" does not mean "be absolute" in the sense of completed or finished up, says Professor Dewey. It means: Be adequate in your present functioning; be all that your present opportunities permit you to be, so that you can be the most and best possible in future stages of your career. It means: Be perfect in the sense of so living now that you will be able to get the most out of the future which is dependent upon it. If I look for a tool in practical life, I want it relatively complete, perfect as relevant to a definite end. But I do not want my experience stopped, finished up at that point. I want it to be complete in the sense of adequate, but to secure just this I must have a constant stream of fresh experiences. Perfection in the sense of maturity or ripeness is a purely relative term. Real perfection is the capacity and fact of life, of growth, of development, of evolution — not finality.

We all of us are continually having experiences which in a concrete and functional sense are absolute. This occurs whenever in any rela-

tively satisfying activity we feel, for the time at least, that we have achieved something worth while. Any state of experience in which we feel that we have won a value that is relatively adequate is, for that experience, absolute. Our search does result in finding, we do sometimes achieve our ends, get somewhere, accomplish something. To this extent and in this sense it may be said that we are of, with, to, for, in the Absolute. I work hard to earn a thousand dollars; and when I have it credited to me on my bank account I have a feeling of something attained, a goal won. This is the absolutism of realization. It may last but a moment, the end achieved being turned over into means to further ends; but while it lasts this feeling of accomplishment and achievement is an absolute experience. Derivation is only one way of viewing experience. We conceive of experience as a process which has a starting-point and a goal only when it is relatively inadequate. But in moments of satisfaction, in moments of relative absorption, in those moments which we may call absolute because they are relatively summative and consummative, the questions of origin and destiny become irrelevant,—irrelevant because in such moments there is no discrepancy, no contradic-

tion, no problem. Validity collapses into immediacy. Experience everywhere assumes these two aspects. On the one side, it is always summing itself up in definite interests which for the time being are absorbing. But while these are empirically ultimate and complete, they in turn cease to be ends in themselves and become means for finding something else. Infinity of space and time simply means that there is no experience which may not be put to a use beyond itself, there is no end which may not become means to a further end. The universe is infinite in the sense that everything we get is converted into capital for getting more. "Experience is for the sake of more experience."

CHAPTER IX

MIND AND MATTER

§ 32. THE DILEMMA

THE question of the nature of consciousness is the leading problem of current philosophical controversy. It turns on the meaning of a pair of abstractions — the psychical and the physical, or mind and matter. Various views obtain. Some have held that matter is the true reality and that mind is only a form of matter, others that mind is the only true reality and that matter is a lower manifestation of mind. Some have held that both are true forms of reality and that they are causally interactive, others that they are parallel manifestations, not causally interactive, of some unknowable reality beyond our experience. Still others hold that they represent complementary abstractions from the concrete reality of our experience. Our endeavor will be to show in what sense this last statement is true. Theories.

Physical science, because of her rigid mechanical principles, seems forced to view the universe

as a mere machine. She therefore denies the presence of mind and consciousness as efficient causes in nature. So-called psychical energy she regards as a delusion. There is no need for postulating a second kind in addition to what we call physical energy, for according to all scientific principles it is quite superfluous. It accomplishes nothing that can be measured by scientific apparatus. There is no experimental evidence of its existence. If the psychical is a form of energy, examination should show that a certain amount of physical energy disappears to reappear as psychical. But she does not find this to be true.

The Problem.

Yet science has no wish to be dogmatic in her denial of the reality of the psychical. She must defend her domain and her method against the encroachments of what she conceives to be a new form of occultism, but she desires to maintain an open-minded attitude toward new facts. For that reason she has formulated as a provisional theory the doctrine of psychophysical parallelism. This theory maintains that the physical and psychical are two orders or aspects of reality which exist side by side without coming into causal relation with one another. There is a dualism which

Psychophysical Parallelism.

runs throughout the universe, a chasm which science acknowledges she is powerless to bridge, but the presence of which she nevertheless feels constrained to admit. She does not attempt herself to penetrate into the puzzle of the relation between the two. She contents herself with the doctrine of parallelism as a working hypothesis. She finds the psychical a sort of white elephant on her hands: she cannot wholly deny it and thus get rid of it, nor can she accept it and incorporate it into her own system. Therefore she simply says that they stand side by side, and lets the problem rest there or hands it over to metaphysics. As we shall see, this is as bad science as it is metaphysics. If scientific method leads to such results, the fault lies with the method.

Modern thought has been brought to an impassable gulf in its doctrine of mind and matter by reason of this rift in reality. It dates back to the Cartesian dualism for its inception, and still underlies most of the scientific and philosophic thinking of the present day. Starting from this common assumption, the physical and the psychological sciences have investigated their respective problems, each largely ignoring the bearing of its results upon

The Antinomy.

the other. The result has been that the chasm has widened and deepened until a great scientist (Du Bois Reymond) cries, not only, We do not know, but, We never will know; it is the absolute-enigma. Another (Tyndall) bows his head before "these two incomprehensibles." And even for many of the professional philosophers the relation between them remains an ultimate and insoluble mystery. Physical science, starting with the material world as the only true reality and reducing mental phenomena to brain activities, finds no place for conscious purpose or freedom. Thus we have scientific materialism. Psychological science, on the other hand, starting with mental phenomena as by definition totally different from the physical, and reducing everything to states of consciousness, finds no way of getting from this subjective sphere of mind over to the objects of the external world. Thus we have systems of panpsychism. Huxley says that the reality is the brain and nervous activity; the accompanying mental states are simply the symbols in consciousness of changes which take place automatically in the organism. Thus a biologist. But Mr. Strong with equal confidence assures us that brains and brain-states are shadows or

symbols merely; the true reality is consciousness. Thus a psychologist. There seems to be a helpless seesaw of equally defensible but diametrically opposed positions.

Inevitable Materialism.

My volition appears to cause the movement of the hand that writes these words. The printed page in turn certainly seems to be the cause of the sensations I have when I look at it. This is the interactionist view, the view of common-sense thinking. But no, the scientific parallelist replies: Such a view would overthrow the deepest principle of science — the doctrine of the conservation of energy. Thus interactionism faces the dilemma either of contradicting the testimony of the common consciousness or of flying in the face of science. Science has tried to escape materialism by the hypothesis of parallelism. But she has signally failed. We are only plunged into a deeper problem. Parallelism is in no better plight than interactionism. On the one hand, by the avowed materialists consciousness is stated to be a product of evolution. It follows that it is an efficient factor in that evolution. It is therefore a form of energy and obeys the law of the conservation and convertibility of energy. This is the frankly materialistic conclusion. On the

other hand, according to the hypothesis of parallelism consciousness is not a product of evolution, because physical energy and consciousness are by definition disparate phenomena. The physical world, therefore, is a mechanism explicable entirely apart from consciousness. It is a self-sufficient system. The psychical plays no part as a factor in the scientific explanation of nature. Voluntary choice must be explained as mechanically as reflex action. Even granting, therefore, the existence of a parallel or concomitant psychical realm, the scientific statement of the universe is of necessity materialistic. Either argument leads to materialism.

"Parallelism" a Misnomer.

That the monistic doctrine should do so is obvious enough. It is perhaps not so clear at first in the case of parallelism. But if the psychical and the physical are absolutely disparate, how can they be parallel? As a recent writer has said, if the question were properly stated, it were better called non-intersecting perpendicularism. If they are not absolutely disparate, why emphasize the fact that they are parallel in time more than the fact, say, that they are coexistent in space or causally related? "Parallelism" is a misnomer for a doctrine which restricts

science to the physical side. If science is to leave any place at all for consciousness, it cannot be treated in this purely negative way. It must be given some positive significance. And that science which finds no way, in terms of its own categories, by which logically it can give positive significance to the psychical simply shows the utter dogmatism of its method.

Science has practically handed the problem over to metaphysics as insoluble. This is shown by the fact that men of science now adopt parallelism with the distinct recognition that it is not a solution but simply a provisional formulation of the facts. For the philosopher, however, the parallelism of mind and body is no postulate. It is rather a problem, a subject for further reflection. A doctrine of absolute parallelism, with all that such a doctrine implies, would mean the abandonment of metaphysics. It would be to give up the problem at the start. To say that the psychical and the physical are parallel in the sense of being absolutely disparate and independent is not only a self-contradictory use of the term "parallel," but it prejudges the whole controversy. The real problem lies within this word. In what sense are they parallel? The

The Underlying Assumptions.

time has come when what professedly is but a working hypothesis of science should be either established as a law or rejected as a false account of the facts. Strenuous efforts have been made so to modify the hypothesis of parallelism as to make of it a solution and not simply a restatement of the problem. All the fantastic constructions of hylo-idealism, pan-psychism, the mind-stuff theory, the theory of conscious-automatism, the doctrine of psychical causality, the identity hypothesis, and the universal parallelism of the psychical and the physical as complementary aspects or phases of an unknowable reality illustrate the extremes to which theory has been pushed in the attempt to escape this paradox. But these efforts have served only to point out the futility of the hypothesis as a statement of the problem and its absurdity as a solution. The difficulty of the problem of parallelism lies not upon the surface, but in the underlying assumption that there are two orders or phases of reality capable of being thus related. Parallelism, in other words, is an insoluble enigma because, like all the great test-problems in the history of philosophy, it presupposes a certain answer in the very form of statement of the question.

Now of course we do not for a moment believe that such a dilemma is the necessary outcome of science. It is thus stated only to point out that the solution is not to be found in terms of scientific categories as they are at present conceived. We must go back of the mere words. We must dig down to the basal presuppositions of the discussion. Professor Herrick has called the mind-matter problem "the Great Bad." It seems to embrace within it more uncriticised assumptions and flat contradictions than any other single topic of philosophical controversy of recent times. Until we can come to some sort of an understanding on the fundamental premises of the problem, further discussion of the question from the diverse points of view promises but little in the way of a solution. The misunderstandings which give rise to controversy arise in large measure from differences in conception of the meaning of the terms. It appears impossible to discuss the question of the relation between mind and matter without presupposing a certain view of their nature. It would seem that those who take part in the controversy must first agree as to the meaning of the terms fundamental in the discussion. Yet it is doubtful whether this is pos-

A Question of Method.

sible, since it is not to be expected that we can arrive at a clearer conception of the nature of mind and matter without this involving at the same time a truer view of their relations. To fix rigidly the presuppositions of a discussion is to predetermine its outcome, and this destroys its scientific and philosophic value. It is no more possible in philosophy than in science to come to an agreement on first principles before discussing a problem with one who holds a different view. Ultimate presuppositions and the immediate necessities of argument cannot be thus held apart. They are as organically interdependent as blood and the tissue which it nourishes. All that one can hope to do is to make clear what he thinks are the initial assumptions of his argument, and then show in what direction that argument itself tends to modify those very assumptions. If one has a preliminary certainty as to what he means by mind and matter he scarcely needs to go on to unfold his view of their interrelation. The latter is implied in the former. The question thus is not the easy one of first agreeing on a platform and then carrying through the campaign on this basis. Philosophy recognizes no platform which at any stage in the campaign may not have to be re-

planked. Are we, then, not to ask the question for fear of prejudicing the answer by the form in which the question is put? We may ask the question if we recognize that the answer can be true only from the point of view from which it is asked, and continue thinking and investigating with the aim of substantiating or refuting this point of view.

§ 33. THE EVOLUTION OF THE DISTINCTION

The problem of "mind" and "matter" therefore resolves itself into the question of what we mean by these terms. In my naïve unreflective experience I am neither mind nor body alone. Nor am I a composite of the two. I am all or none of these in the sense that the dualism implied in these terms has not yet been set up. How this distinction arises in the evolution of consciousness in the race or in its development in the individual can be understood only when we have succeeded in disentangling the bonds of intercommunication which constitute individuals into what we call society. Conscious individuality can be understood only by the analysis of experience made possible by a social psychology. Of one thing we may be reasonably sure, that the emergence

Primitive Conceptions.

of the psychic aspect or factor is connected with the process of the mediation of experience. It first appears as the source of error and illusion. Things are found to be not what they seem, and this apparent unreality is hypostasized as a separate realm of being. When man learned that the earth revolves about the sun instead of the sun's rising and setting as it appears to do, he relegated the apparent phenomenon (which he then called an illusion) to a state or effect in the individual which does not find its counterpart in the cosmic order. Appearances of this sort are set apart as a separate realm with its own laws and principles. This realm furnishes the data of psychology. Consciousness is the unclassified residuum, the still unexplained — a sort of epistemological scrap-heap.

Animism.

The clear distinction between mind and matter came relatively late in human development. Man in the beginning made no such distinction. And when he did begin to make it, it was made hesitatingly, confusedly, and inconsistently. In the beginning, mental states were treated simply as so many more physical objects; or physical objects on certain occasions were sublimated into psychical abstractions. To the savage, and even to the

Greek sage, the symbol instead of representing the object seems to have contained its essence. This is the significance of Plato's hypostatization of ideas or concepts. The ancient idealist swept all reality into his conceptual forms without feeling the ontological incompatibility of mind and matter. On the other hand, by the ancient materialist the soul was not conceived as a phosphorescence or epiphenomenon: he had no difficulty in conceiving both body and soul as material in their nature. When mental states began to be described, it was in terms of physical objects and processes. No new language was invented, but old words were broadened to cover the new phenomena. Thus the mind came to be viewed as a substance or entity like matter except that it was less palpable and visible, more ethereal, shadowy, and vaporous. The soul was represented as breath, as fire, as motion. It has been suggested that man's knowledge of his psychical self or soul, as distinguished from his body, may have first come from seeing his image in the water or from a reification of his dream life. More probably it is to be connected with the fact of breathing (ψυχή, anima). "The stream of thinking," says Professor James, "is only a careless name for what, when scrutinized,

reveals itself to consist chiefly of the stream of my breathing." However that may be, we know that this shadowy intangible world in the course of time came to be given a separate existence and even to take precedence in thought of the material world. The motive for this was doubtless in part a religious one. The spirit world was the abode of good and evil demons, of deities and devils. It was also the place to which at death the spirits of men and animals were translated. Even in the Middle Ages, after the dawn of Christianity, the Kingdom of Heaven, the spiritual world, was conceived as a supramundane sphere for which this world was only a probation.

Modern pan-psychism, however, must not be confounded with primitive animism. The animism and hylozoism of primitive humanity represent simply the unreflective anthropomorphizing of non-human objects. Early fetishism, sorcery, zoölatry, and witchcraft represent no reflective distinction of a spiritual world, since the shadows, ghosts, or spirits supposed to people Hades have largely the same characters as living men. It is only very slowly, out of this prereflective undifferentiated matrix that the realism and idealism of later thought develop. The souls of

living things became more and more detached from organisms and used as abstract principles until in the so-called idealism of Plato we find the abstract universal idea hypostasized as the essential reality. But this is not idealism in the modern sense; the ideal is not identified with the psychical.

The evolution of the psychical in the psychological sense of the term is a comparatively modern achievement. According to the Greek the universal is the real; the particular is the unreal. But in the evolution of the individual as seen first in the undercurrent of revolt against authority in the Middle Ages and later in the assertion of intellectual and moral freedom in the Renascence and Reformation, we find that what the Greeks regarded as the illusory and unreal is taken as the most certain basis and starting-point of philosophical thought. The consciousness of the individual among the Greeks was not differentiated from that of the community life. It was only through Christianity, which brought the Semitic inwardness into contact with Greek objectivity, and through the invasion of Greco-Roman civilization by the Teutonic or Germanic races with their insistence on personal freedom, that the individual

The Psychical Factor.

came to be set over against the institution as in himself embodying reality as truly, and it came even to be asserted more truly than the State or Church. This is the philosophical significance of the Renascence, of the Reformation, of the Protestant political revolutions, of the rise of the free cities and the fall of feudalism and, in reflective thought, of nominalism as opposed to the realism and conceptualism of the mediæval period. Especially do we see the evolution of the individual in the political and industrial history of England, and there also significantly we find the greatest development of psychological philosophy which adopts essentially the standpoint of the individual consciousness, making fundamental and thoroughgoing the principle that was only hinted at in Descartes's "I think, therefore I am."

Subjectivity.

Now just as the Middle Ages hypostasized the abstract ideas or universals of the Greeks or carried on the process which was begun by the Greeks, so modern thought has hypostasized the psychical individual as a separate self over and above the physical or bodily self, at the same time incorporating into this conception certain ideas from the Greek notion of the real ideal as contrasted with the

illusory phenomenal world. The difficulty of the problem may be gathered from the fact that there are at least nine different meanings given to the distinction between the "subjective" and the "objective" in the history of reflective thought, these words having completely reversed their meanings since the Middle Ages. The mental at first was conceived as immaterial, unextended, and simple as compared with the complexity of the extended material world. Then later, as the facts of localization of the psychic functions in the nervous system were discovered, it became conceived as spiritual being possessed of certain faculties or powers corresponding to certain parts of the brain. And in its latest phase, in pan-psychism, we have mind clearly hypostasized as a separate realm of being coextensive and equally complex with, though causally independent of, the whole physical world. Under the influence of the doctrine of evolution the animal soul and rational spirit which even Descartes distinguished came to be identified and man viewed dichotomously as body and mind (soul or spirit) instead of trichotomously as body, mind, and soul (or spirit). The transformation from the ancient point of view is complete. Instead of the world of ideas being

a fixed and static world, it is viewed as in continual flux, as a stream of conscious states. And just as the conception of inert lump matter has given place to the doctrine of energy, on the physical side, so the conception of fixed mental faculties has given place to the doctrine of psychic functions. We no longer speak of mind *and* its faculties, of functions and that which *has* the functions. The mind does not have functions; it is the functions. It is real only in the activity, or rather its activity, its functioning, is its reality. Its various faculties — sense-perception, memory, imagination, etc. — do not "belong to" the mind; they *are* the mind. Each factor is the function of a common activity, a moment in the single process.

Thus we see that what was at first purely practical was gradually transformed into an ontological distinction, the mental being hypostasized in one form or another as a distinct order of existence. The solution of the problem lies in getting back to the principle involved in the practical attitude.

§ 34. CONSCIOUSNESS AND EXPERIENCE

We have here a crucial case for testing the validity of the functional method of dealing

with ultimate concepts. What do I mean when I speak of my mental or spiritual life? I refer to certain acts on my part, adjustments which as an organism I make to my environment, which are of a less overt and gross character than acts such as walking, or moving my arm. To move my lips is a physical act, and as such is not regarded as spiritual. But to think of a word, such as "baby," which contains two labials, is called a mental act. Of course the one is as much physical as the other; there is no thinking, so far as we know, which is not done by an organism. The difference lies, therefore, not in the fact that the so-called physical is an act performed by an organism in space and time and the spiritual an immaterial disembodied occurrence: it lies somehow in the different degree of overtness or in the different functions or uses they serve in relation to experience.

The difference in the degree of overtness is at the basis of the distinction between the spiritual and the physical. One person is said to have a purely spiritual fellowship with another person when there are no physical contacts. There must of course be physical relationship of some sort. It is difficult on any other grounds to see what

The Difference between the Spiritual and the Physical

might be meant by fellowship; there is no adequate evidence that we may have fellowship with discarnate spirits (assuming that there are any such, which also is unproven). But it is obvious here that this is simply a difference in the character of the physical adjustments which take place. Instead of taking my friend by the hand, hearing his voice and looking into his eyes, I have only, let us say, read his poetry or I know him only through the letters I receive from him. It must be through some physical adjustment that I know him, if I am to know him at all: reading and writing are as much physical acts as shaking his hand — but these are acts of a finer sort, involving more delicate muscular coordinations; and because that is an important distinction practically and socially, it has come to be regarded as dividing the universe into two realms of matter and mind, organism and consciousness, things and thoughts.

Is simply a Difference in the Overtness of Activity.

All this distinction really represents, however, is the fact that certain acts in our experience are used, or function, in a different way from other acts. Reading, writing, and especially what are called the distinctively mental processes of thinking, are acts which in a peculiar sense stand for

other acts. Reading his poetry or his letters is a vicarious substitute for hearing my friend's voice and seeing the play of features on his face. Writing a letter to him is a substitute for taking his hand, looking into his eyes and talking with him. It is only necessary to carry this principle a step further and it becomes apparent that all thinking, that indeed all so-called mental or spiritual processes, are simply vicarious substitutes for other acts usually of a grosser, more overt sort. This is recognized in the familiar saying that thinking is only an inner speaking, or that thinking, as Bain said, is refraining from speaking or acting. But this is true not of thought only; it is the essential character of all mental processes. Feelings, as the physiological psychologists have shown us, represent vestigial reactions of an instinctive sort, and images, ideas, volitions are simply acts in the incipient or nascent stage of their development.

It is clear, then, that the fundamental difference between the physical and the mental lies not in some original difference in their character, the one being material and extended, and the other immaterial and non-spatial, but that the psychical or mental represents simply a difference of use or function of the same experi-

ence or reality which in a different context is called material or physical.

But the old ontological conception of mind and matter as realities of rigidly and absolutely different character is so engrained into the thought and language of modern times that it is extremely difficult to eradicate it or so to transform it as to show the true functional character of the distinction.

Consciousness is not a different kind of existence from matter. It is the one reality of our experience undergoing transformation under certain conditions of relative tension in adaptation. The direct experience of the child or animal, or even of the human adult when he is not thinking, is made up of a series of states or acts which present no conscious distinction between subject and object, or between psychical and physical. But if some uncertainty or doubt or difficulty arises, this experience is broken up so that a duality appears within it — a duality of function which serves to dichotomize the experience into one part which is regarded as uncertain and problematic, and another which is taken as certain or given.

Consciousness not a Distinct Kind of Existence.

This may be illustrated as follows: My ex-

perience of the temperature in this room up to the present moment, let us suppose, has been neither physical nor psychical, neither objective nor subjective. But now I become conscious of the fact that it has been getting colder. I feel a draft. I see no open window or door. What can be the cause of it? Here is a polarizing of my experience. There is something which is uncertain — the cause of this chilling atmosphere. This occupies the foreground of consciousness; it is the salient, the absorbing feature of this experience. Besides this there is the general background of things in the environment which being irrelevant in this situation are simply taken for granted — the chairs, table, books, etc. The door, the windows, the draft are in the focus of consciousness; they are psychical. My overcoat hanging on the rack is on the border-line; it is in a fair way to become psychical provided the room gets cold enough and I am not able to discover the cause of the draft. That is, the overcoat in such case passes into the foreground — and this is what we mean by the functionally psychical aspect of the experience. The draft, the door, the windows, and the overcoat will then remain the psychical aspect of this experience until I

Illustration.

locate and remove the cause of the discomfort. Then the experience will lapse again to the former level of direct stimulus and response so far as temperature is concerned. In another instance, instead of being the temperature which is brought into the focus, it may be the light. Dusk may come on while I am reading, so that finally I am no longer able to pursue my work. Then the whole situation of insufficient illumination comes to consciousness while I search for a light. But when I strike a match, light the gas, and resume my reading, the light situation retreats from the focus just as did the temperature situation. Thus what is undergoing reconstruction in consciousness at one time or in one situation may be taken for granted as irrelevant in another situation. And when we say irrelevant we mean simply that it is taken as given in that situation. It is irrelevant because it is so thoroughly taken for granted, so completely assumed as there: it is not the particular phase of the experience which is undergoing modification.

By the naïve consciousness is meant an immediate, direct, practical, uncritical sort of experience, which does not turn back upon itself, which does not reflect upon its own technique,

but moves on from one "objective" situation to another without any conscious interpolation of the self into the process. It is characteristic of reflective experience, on the other hand, that it explicitly distinguishes between self and thing, agent and situation. In addition to directing the attention to the objective environment, it brings clearly into relief and seeks consciously to direct the subjective or personal side. This does not signify that the self is equally explicit in all experiences. It asserts only that the self must figure to some extent in every experience which is conscious. The self may be relatively submerged or prominent, but in principle it must be there. As to the question of the conditions under which the self becomes relatively explicit, the simplest reply is, when the readjustment involves some alteration of the attitude of the organism itself. When the adjustment is one involving alteration of two or more features of the environment in relation to each other, features to which the organism sustains a common reference, then the self does not explicitly figure, just because it is equally implied in both the contending factors. Here we have the true explanation of the fact that many of our socially

Naive Consciousness.

important adaptations are often not accompanied by any vivid reference to the self. Self does not consciously appear in the more immediate modes of perception and reaction just because it is so thoroughly organized into all the leading elements in the situation.

Now what is the significance of the introduction of the self into the ongoing experience? And how does this affect the interpretation of the distinction between the psychical and the physical? I say that *I* eat food, *I* go to town, *I* dream, *I* love, *I* win fame, *I* seek my soul's salvation, *I* study my own mental states. It is possible to take the "I" here in a perfectly naïve sense without any connotations either psychical or physical. What leads me as I become sophisticated to distinguish the mental from the material part of my self? What is the origin and function of this distinction? It arises just because the naïve attitude in some experience is not adequate to control the situation. The problem presented by some new phase of life demands a more precise determination of the means or conditions of action on the one side, and of the ends or criteria of action on the other, in order to carry out the adjustment necessary to reach a satis-

Reflective Consciousness.

factory solution. This determination of the conditions of action requires a statement of the steps necessary to carry out the coördination in terms of some objective technique. Such is the history of the evolution of all scientific apparatus. Machinery is objective in the sense of being socially accessible, communicable, and verifiable. The material object or mechanism is something that I can count on; it persists comparatively unchanged, and hence by means of it at least a relative stability and control are introduced into my experience. The objective world, the material world as science knows it, has been built up in just this way, in response to the demand for a fulcrum or point of leverage in carrying on my activities.

But while this search for pivotal points or centres of control in that part of our experience which we call the physical world has been going on and has been measurably successful, there has been gradually set apart in contradistinction from this world of objective control-centres another world of subjective personal attitudes which are not thus permanent or whose permanence is not at any rate a socially interchangeable phenomenon. This world of organic attitudes, determined at least in part from this

finite centre in space and time which I call my organism, just because of this relative lack of control, comes to be distinguished from the other, as the mental world. The self enters into experience as the incalculable element, the indeterminate factor, the independent variable which must be figured into each equation.

There is reason to believe that in the future we may have a psycho-mechanics which will reduce to law the conscious activities of the complex mechanism that we call the brain just as at present we have physical, electrical, and the beginnings of a biological mechanics. But until that time comes our mental life is open to all the vagaries of explanation which always hover about the unclassified residuum. The most subtle of these is the doctrine of the soul as a separate entity, a doctrine the more difficult to eradicate because so firmly intrenched in our religious and ethical consciousness. Says a recent writer, "In all regions of phenomena the belief in entities has retarded the progress of knowledge. Light, heat, electricity, magnetism, each in turn has been conceived, not as the result of certain conditions, but as a mysterious principle controlling the conditions." And as another writer says, "Col-

Psycho-mechanics.

ors were first supposed to be in the outward objects, then in the light coming from these objects, then in the eye that perceives this light, then in the nerve acted upon by the eye, then in some part of the brain acted upon by the nerve, and a very small step remains to perceive that color, and that every sense-perception, is an activity of the mind." Mind, in other words, is not a separate realm of existence. It is a manifestation of the same universe that we ordinarily call physical. Consciousness can no longer be regarded as a peculiar substance or entity. Nor is it a quality or attribute of such a substance. It must be regarded, in keeping with the dynamic concepts now current in the physical and biological sciences, as a certain relation in which the contents of experience stand under special conditions of relative tension in adaptation. It is the use of one part of experience to get another, the vicarious substitution of one experience for another; and since the incipient act is a more economical form in which to handle an experience than its completely determined overt form, such incipient acts taken together as standing for all experience when it is undergoing transformation are called mental. But it is not a different experience; it is the

same experience in a different mode or stage or phase. It is experience functioning in a different way, not a different kind of experience.

In the history of science the questions have been asked in succession: What is light? What is heat? What is electricity? What is life? And now the question is asked: What is consciousness? The answers to these questions without exception have come indirectly. We cease to ask the question as to *what* these things are as we come to know more about *how* they operate and in what relations they stand. Light, for example, was first regarded as a special kind of substance thrown off in the form of minute corpuscles from the luminous body. Later it was conceived as a mode of motion of the ether. Now the electro-magnetic theory substitutes electric waves for undulations of a so-called elastic-solid called the ether. Life used to be explained by a special vital force. Later it came to be stated as a property or attribute of a certain kind of matter called protoplasm. Now it is defined in terms of action or behavior as a perpetual disturbance and recovery of equilibrium of a system of inter-active energies. So with consciousness. Mind has been conceived as a distinct kind of being. It has been viewed as a

property or quality of an underlying substance. Now it is coming to be regarded as a complex of activities, a system of relations, a sum of utilities. The answer to the question as to what mind *is* is a description of what it *does*, the relations in which it stands, the functions it performs, the uses or values which it represents.

Object-Consciousness and Self-Consciousness.

Self-consciousness is thus not a later and higher development, but at least in a rudimentary form is characteristic of all consciousness. It is consciousness with the emphasis on the agent rather than on the situation. There is a notself-consciousness or object-consciousness as truly as a self-consciousness or subject-consciousness. Self and object or agent and situation are correlative aspects of experience. In the wider sense which identifies it with the totality of experience, the self embraces both consciousness-of-the-self and consciousness-of-the-object. The self in this sense sums up the unity and continuity of the process of experience. It is not a fixed entity. It is a dynamic growing reality, a cumulative growth, a constructive synthesis. My self is different, is something more to-day than it was yesterday. The synthesis of self-consciousness is never complete. It is no mere succession

of states of consciousness. More important than the stream of conscious states is that background of organized experience which constitutes an infinite subliminal self of which conscious experience is but the efflorescence and fruition. The real identity and permanence of selfhood lies not so much in the conjunction or connection of ideas in consciousness as in that unity and continuity of action represented in instinct and habit.

Introspection and Retrospection.

We are accustomed to think of consciousness as belonging exclusively to the individual. We hear much concerning the impossibility of constructing a conscious series for other minds than our own, that no one can get beyond the pale of his own consciousness, that his own consciousness is the only one of which he has any direct knowledge, and so forth. That there is a fallacy in such conceptions has long been suspected, but it has been difficult to put a finger upon the source of the error. The fallacy seems to lie in the false conception of the nature of consciousness. After separating it from its content of material and social objects and events, it is treated as still possessing all its characters as consciousness, whereas in truth its very exist-

ence as consciousness consists in the interrelation of these contents.

A number of writers have insisted that introspection, strictly speaking, is an impossibility. Its validity has been called into question by such writers as Comte, Lange, and Maudsley. They insist that all introspection is really *retro*spection, not *intro*spection at all. Introspection, it has been said, is as if one were to look at himself in a mirror and see himself seeing. But one does not in this instance really see himself in his present act of seeing, including both his own organism and the mirror into which he looks. Another mirror would be required for that, and so on indefinitely. If there were a perfect mirror at the end of the room in which I am sitting and I had never tactually explored that end of the room I should be unable to distinguish visually between the actual room and the reflected image. As Mr. Spiller adds: "I now shut my eyes, and redevelop the sight of the room. Does this image fundamentally differ from the object and the looking-glass picture?" "Except for unimportant circumstances, the primary and secondary visual worlds, or the visual worlds of sense and imagination, are one." This certainly is in line with other similar explanations of men-

tal phenomena in physiological psychology. It is in harmony with the tendency in recent years to explain all images as simply prolonged after-images (more properly called after-sensations).

Now does not this suggest that what we call this unique, inner, immediate, direct, unshareable experience after all is arrived at as inferentially as any other experience, that there is no essential difference between the so-called external mirror and the internal mirror, that the image in the mirror of memory is not different from the image in the looking-glass? The more will this appear to be true when we recall the tendency in recent psychology to conceive of memory (Hering) and association (James) in terms of habit and physiological traces in the brain. In principle, as a mirror for reflecting objects, the brain does not differ from the silvered square of glass or from the photographic plate. If, then, memory (retrospection) is essential to introspection and the brain, the organ of memory, does not differ essentially from the physical mirror, how do the reflected phenomena in the one instance differ *in principle* from the reflected phenomena in the other? Is this perchance the solution of the old puzzle of subjective idealism? Is the distinction between the introspective

world (the world of consciousness revealed through memory) and the external world (the world of space and time) in the last analysis simply another self-made problem — a problem arising out of the abstraction of things that in reality are not thus separated? And is this perhaps the core of meaning in the insistence by certain recent writers on the fact of "inter-subjective intercourse" and the essentially social character of consciousness?

§ 35. CONSCIOUSNESS AND THE PSYCHICAL

Psychical and Physical.

It is obvious from what has been said that however we define the term "psychical," it gets its significance in relation to and contrast with the correlative concept of the physical. Even though with the pan-psychist we seek to reduce the physical to the psychical, or with the epiphenomenalist we reduce the psychical to the physical, we have simply renamed the universe. We have not solved the problem suggested by the terms. We have not defined the meaning of either word when we identify it with the All. The old problem of the relation between the two aspects expressed by these terms only breaks out afresh within the new world-view. If it be said that

the same objection might be made to our use of the term "experience" to express the All, it may be replied that the two cases are not analogous. Pan-psychism reduces reality to mental experience in the sense of denying the existence of the physical as such. Epiphenomenalism in like manner virtually denies the existence of the psychical. The view here presented, on the contrary, denies the existence of no phase of reality in describing the All as experience. It asserts that reality is reality only in the process of becoming experience, and that experience is experience only in the process of realizing something specific and concrete. If mentalism and materialism undertook to show the functional significance and interdependence of the psychical and the physical, it might be different. But they deny the existence of that which in some sense must exist in order to make even the denial intelligible.

The Psychical and the Conscious.

Objects are not presented *to* consciousness. Nor is consciousness *a subject* apprehending these objects. But consciousness is the subject-object relation, the relation of tension and interaction between these two aspects or factors. It is not the subjective or psychical *aspect*. It is the tension of the sub-

ject and the object, of meaning and existence, of theory and fact, of the psychical and the physical, of ends and means. A great deal of misunderstanding has arisen from the confusion of consciousness in this inclusive sense with the psychical, which from this point of view is only one factor or aspect. In the present state of psychology one may perhaps be permitted to use the term "consciousness" as he chooses provided that he clearly define it and consistently adhere to his definition. He may make consciousness and the psychical identical. But in that case he must face this problem: How can consciousness know the physical if by definition the physical object is outside of consciousness? Here is knowing and there is object known. If there is to be no third somewhat introduced to explain it, the question at once arises as to why there should be this dualism. Why should there ever be this relation of opposition between subject knowing and object known?

This in no sense denies the existence of the unconscious; it simply denies the independent existence of either the physical or the psychical. These exist only as they function within conscious experience; they have no existence apart from this rôle. The ex-

The Psychical and the Unconscious.

istence of the unconscious is in no way affected. Experience of the more attuitive type, such as instinct and impulse, exhibits a preconscious or prereflective state in which the distinction of the psychical and the physical has not yet been set up. And experience of the intuitive type, such as habit, motor automatism, and æsthetic absorption, exhibits postreflective states in which the two phases have collapsed once more into a relatively undifferentiated unity. The latter, however, must be recognized as a synthesis on a higher or at least a different level from that of instinct. Consciousness and the psychical, therefore, are not identical in any sense which excludes the physical, for consciousness consists in the mutual opposition and interaction of the psychical and the physical. It follows that the unconscious is not to be identified with the physical, for the physical comes into being as such only in consciousness, i. e. only in contrast with and relation to the psychical. The psychical and the physical are present, if you please, in both unconscious and conscious experience, the difference being that in the unconscious the relation between the two is indeterminate or implicit, while in consciousness they become determinately explicit.

Experience may be conceived either as content or as process. As process consciousness perpetually eludes introspection. It is the unique increment or reinforcement of experience which, just because of its relative novelty, is incapable of classification until it can be stated retrospectively in terms of other experiences. It is experience at its growing-point, the cambium layer, so to speak, where all is fluid and undergoing modification — a process at once of transformation, reorganization of the old, and construction, organization of the new. We have found that experience becomes conscious under certain conditions of relative tension, i. e. experience is conscious when it functions in a certain way. From this point of view consciousness is experience undergoing metamorphosis. Consciousness is here viewed longitudinally or genetically, i. e. from the standpoint of the spectator.

Content and Process.

As content experience presents two correlative phases — the physical and the psychical. The physical is experience stated from a certain point of view — that of the extra-organic world. The psychical is this same experience stated from the standpoint of the organic attitudes with which in the narrower sense I identify myself.

The distinction between the two aspects is, however, purely a methodological one, so that the two aspects are to be considered as functional phases of the same thing rather than as representing separate existences. That is, viewed from within, from the standpoint of the individual who is conscious, this metamorphosis appears as a polarization of aspects. It is not a stage of development intermediate between two unconscious acts or states (the point of view of the outside observer), but is just the process of tension and interaction of factors which when viewed in cross-section (analytically) appear as the psychical and the physical. The act of knowledge or reflection transforms the process into a content.

Much confusion has arisen from equivocal use of this term "psychical." The psychical as process is simply a synonym for consciousness. But as content, as datum of scientific or philosophic reflection, it exists only in relation to and contrast with the physical. As the object-matter of reflective thought it is an abstraction from the concrete process of experience. Professor Buchner has reached the heart of the question when he says: "The 'process' and 'thing' views must be unified in a conception

that regards the thing not as static nor the process as merely drifting; then we first come to a right view concerning the object of psychological research." These two points of view really represent two different interests — what have been called the structural or analytic and the dynamic or functional. When we represent experience or the soul as a "thing" we are interested in it as an achieved fact, something valuable in and for itself. When we view it as fluid, as a process, we are viewing it as instrumental to the gaining of a value which is not yet actualized; we are viewing it as means to an end. Both are necessary movements of abstraction within our reflective experience, but they must be interpreted in terms of each other and both must be interpreted in terms of the concrete whole from which they abstract. That which is referred to by the parallelist as purely physiological, and which in our phraseology is that part of the dynamic system which is out of the immediate focus of sensation, is not something outside of consciousness, for, as we have seen, no intelligible meaning can be attached to the spatial metaphor when applied to consciousness: the physiological or unconscious background of consciousness is simply that part of

experience which is irrelevant in the given situation.

Here is a spinning top. We cannot ask what the spin is apart from the top: it would be like asking for the grin without the cat. We cannot drain off the relation on a wire like an electric current or skim it off like cream from a pan of milk. Try to catch the spin and you stop it and what do you have? The top? Yes and no! No, since a top which is not spinning is not the full reality of a top: you simply have the permanent possibility of a top, a potential top, since a top is something which spins. Stop the spin and you get something, to be sure, but it is not top. We call it a top, but only as an artifact, if we think closely. Similarly, as Professor Baldwin has pointed out, a microscopically thin slice of the cortex of a human brain is not brain, since you have killed it in order to study it. A brain is not its full reality as a brain except when it is conscious. Matter is not its full reality as matter except when it is thinking. The converse, of course, is equally true, that just as it would be foolish to attempt to state the spin apart from the top, so it would be absurd to attempt to state consciousness apart from brain. Mind apart from

Illustration of the Top.

matter likewise is an artifact. Attempt to state what mind is as a content and you always get a physical statement. Investigate the nature of an emotion, a sensation, or an idea, and you find nothing but what is statable in physical terms. Matter is simply mind construed, interpreted, just as the "top" is what you get when you take hold of the spin to see what it is like. Just as the reality in the one case is the spinning-top or the top-spinning, so the reality in the other case is matter-thinking or thought-finding-hands-and-feet.

§ 36. DUALISM AND MONISM

Is dualism or monism true? For answer we may say that there is but one reality, the reality of experience. Absolute dualism is a contradiction in terms, but a relative dualism or pluralism is not inconsistent with a monistic metaphysics. Paradoxical as it seems, experience is always one even when it is two, for the duality is a distinction set up within the unity.

Is reality ultimately material or spiritual in its nature? In reply we may say that what we call the spiritual is the use to which the material is put. It is the new value or worth or function of any part of reality in relation to any other

part or in relation to the whole. This appears especially at the points of specific need and therefore of readjustment, at which reality is undergoing transformation. Spirit stands for the fact of the reorganization of experience in somebody's consciousness—such reconstruction being always an individual affair. Mind is matter evolving, or if this seems too bald a statement savoring of materialism, it may be said that consciousness is the same reality or experience, viewed dynamically as process and as undergoing metamorphosis to a higher level, that we call matter when regarded statically upon any given level already attained.

Is parallelism or the identity hypothesis true? In reply we may say that both are true if stated correctly, because each presupposes the other. Consciousness is experience in its growth phase. But growth implies tension and interaction of parts: this is the truth in parallelism. In reflecting upon and attempting to state such a growth process we carry over from our past a phase of experience which we take as the basis of the transformation. From our experience which is to be, which is present to us only as an ideal content, we formulate a phase which is conceived as at once an outgrowth from, yet at the

same time transcends this basis of our past experience. The interaction of this "past" and this "future" content is the process of consciousness. This is well illustrated by the relation of the copula to the subject and predicate in the judgment. In the subject and predicate we have the content, or distinguished contents, of the judgment; but in the copula we have the process of judging which, though having no reality apart from the relatively static contents, yet is necessary to constitute these a dynamic act of thought. The parallelism of the psychical and the physical is thus an attempt to state in the static terms of content the tension or polarity which is the essential nature of the process of consciousness. Since consciousness is the very act or sphere in which the past content of experience is being transcended, or reconstituted, it is obvious that it is impossible adequately to describe in terms of past content the process in which at the present moment the new content is being evolved.

In any case, it appears that we are in sight of a solution of the problem in the only sense in which solutions usually are found for philosophic problems — the recognition that it is not a problem after all but a shadow or ghost of our own

faulty dialectic. The metaphysical problems which baffle the synoptic thinker grow out of the exigencies of the development of technique in the special sciences. This problem of mind and matter is a typical instance. We create our own difficulties, though they are none the less real on that account. The more necessity, however, that the philosopher should be a faithful student of the way of working of the man of science. All method is a sort of hallucination, and we have the task of threading our way out into the sanity of a more self-conscious illusion. We need to recover the original innocence of our naïve attitude toward things without losing any of the gains made by dealing with them in the more sophisticated way. The situation appears to be the almost paradoxical one of being at once deluded and perfectly conscious of the delusion. Yet this in a sense in all the ages has been the value of philosophy to man; he has answered his own questions chiefly by discovering reasons why it is irrelevant to ask them.

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